CHAPTER 3: DESCRIPTION OF THE AFFECTED ENVIRONMENT

Geology, Land Forms, and Soils

The Saddleback Mountain range is located in the Longfellow Mountain group in western Maine. The "Bedrock Geology Map of Maine," published by the State of Maine in 1985, shows the area of Saddleback Mountain and The Horn as consisting primarily of granodiorite, a light gray porphyritic granitic rock that cooled slowly at some depth. The Saddleback Mountain range was formed during the Acadian Orogeny, a period of mountain building that occurred during the Devonian period more than 370 million years ago. Mountains formed during this time have been transformed through millions of years of geologic history and a constant process of weathering. Glacial ice, the last of which receded some 10,000 years ago, and subsequent weathering and erosion deserve primary credit for creating the mountain landscapes that we see in Maine today.

The ridgeline of Saddleback Mountain runs in a southwest/northeast direction, and is composed of shale, sandstone, and quartz conglomerate. Coarse-grained Devonian granodiorites are exposed along several stretches of the Appalachian Trail in its southern approach to the summit. The summit itself consists of a large area of smooth, glacially polished bedrock, which is in marked contrast to the fellfields found on most of New England's mountain peaks. The scraped rock surfaces on the northwestern slopes, the glaciated grooves in the bare bedrock, the large glacial erratics along the ridgeline, and the small cliffs and ledges on the southeastern slopes of Saddleback are all evidence of the glacial activity of the continental sheet.

Upon glacial melting, which occurred approximately 10,000 to 12,000 years ago, a thin veneer of ice-scoured till was left on the surface of Saddleback Mountain, along with a few exceptional glacial erratics. On the upper elevations of Saddleback Mountain, The Horn, and the 3,772-foot peak northwest of The Horn, as well as in the "saddle" between Saddleback and The Horn, Ricker-Rock outcrop complex soils are present. Soils in this complex are shallow to very shallow, interspersed with sheer bedrock. These high-elevation soils are well drained to excessively drained and are formed in organic material above thin mineral horizons or bedrock. Typically, Ricker series soils have a four-inch thick organic mat of peat and mucky peat over a three-inch thick muck layer, on top of a three- to five-inch silt loam layer, and schist bedrock below five inches. Ricker series soils have severe limitations for virtually all forms of development.

The Ricker-Rock outcrop complex grades downslope into the Ricker-Saddleback association. Saddleback series soils consist of shallow, well-drained mountain soils formed in a thin veneer of glacial till. Typically, these soils have a five-inch organic layer, a one-inch fine sandy loam subsurface layer, a 14-inch fine sandy loam subsoil layer, and bedrock below 14 inches. Saddleback series soils also have severe limitations for most types of development, particularly on steeper slopes. On the lower slopes of the mountain, spodosol soils have developed. These rocky and shallow mountain soils consist primarily of moderately well-drained, sandy loams, which are typically low in nutrients (acid-leached), with relatively thick forest floors.

Climate

The climate of the western Maine mountains is characterized by long cold winters and relatively short summers. The average January temperature is 16°F and the average July temperature is 67°F. The relatively harsh climate of the area is strongly influenced, especially on its southern flanks, by increased moisture and moderated temperature from the Gulf of Maine, 100 miles to the south. The mountain slopes are consistently cooler in the summer and have a shortened growing season.

More than one fourth of the precipitation in the region falls as snow, with an average yearly snowfall of 144 inches per year at the base of Saddleback Mountain and 181 inches per year at the base of Sugarloaf Mountain. The ski areas have a reputation for consistently deep snow cover. Late-melting drifts accumulate on the lee (east) slopes of the summits. Wind is consistently high on the summits, and there is evidence of chronic high wind damage on Saddleback Mountain, with trees flagged to the east and small, irregular fir waves and krummholz on the west-facing slopes. The summit of Saddleback Mountain is often free of snow cover in winter months due to these high winds.

Visual Resources

As visitors begin their hike on the Appalachian Trail at a lower elevation several miles south of Saddleback Mountain, they are encompassed in a natural-appearing northern hardwood forest. This forest is dominated by sugar maple, beech, white ash, and birch, which provide light to moderate screening from the sun and restrict most views to within the foreground. The trunks of these trees form straight, smooth, ashen light vertical elements, which in summer and early fall are contrasted by the papery textures of the leaves overhead. Native soils, gravels, and exposed larger rocks can be seen in the Appalachian Trail treadway and around the forest floor, providing various sized and shaped gray colors on the landscape. The footpath of the Trail crosses several small streams, passes around the shoreline of Ethel Pond and Mud Pond, and then skirts the southern and eastern shoreline of Eddy Pond, an undeveloped, remote nine-acre water body. Throughout this northern hardwood community, there is a relative sense of enclosure provided by the vegetation.

As the Appalachian Trail ascends the southern shoulder of the mountain, the composition of the trees evolves as the straight vertical hardwoods are gradually replaced by the dark blues and greens of spruce and fir. Entering the subalpine spruce-fir community, views become more open, and the spruce and fir become shorter, rarely exceeding 30 feet in height. Hikers are able to see frequent long-distance vistas to the south and west. The effects of prehistoric glacial movement become more visible as hikers continue their ascent and get a “birds-eye” view of the landscape. The bedrock landform of the mountain itself, along with numerous sharp ledges, huge boulders, and large blocks of rock broken by fissures from the effects of freeze-thaw cycles, are the most prominent features of the immediate landscape.

Photo 3.1 Eddy Pond and the southern approach to Saddleback Mountain

Once hikers reach the alpine zone of Saddleback Mountain, they encounter a dramatically different landscape than what they experienced just a few miles before at lower elevations. Gone is the sense of enclosure. The windswept spine of the ridge is exposed and open, and 360° views of the surrounding landscape are available at every step. The massive profiles of the summit and The Horn and the smooth dip of the saddle between them are primary visual focal points. The vegetation is stunted or outright prostrate, with few trees reaching a height of five feet. Rushes, lichens, and sedges, along with bilberry, sandwort, and other low-growing species, are found in this alpine ridge community. Trees appear more like dense shrubs, as patches or beds of black spruce and balsam fir krummholz spread for 20 to 30 feet without exceeding two feet in height. Within these thick beds of krummholz are numerous twisted, bare branches, evidence of the high winds and other climatic extremes that are often present on the ridgeline. Portions of the foundation for the old Saddleback Mountain firetower and the opening cut for a tractor access pathway to the tower are still visible, even though the tower has been dismantled and removed. The rock cairns, painted trail blazes, and worn footpath of the Appalachian Trail are the only evidence of human disturbance. No other sign of development or man's presence is found within the immediate foreground.

Photo 3.2 The Horn and the "saddle bowl" as seen from the Appalachian Trail near the summit of Saddleback Mountain

The 2.5-mile open ridgeline of Saddleback Mountain provides hikers with expansive views of the mountain itself and mountain ranges, forests, and lakes in the distance in all directions. Ten of the state's 14 highest peaks – all of which exceed 4,000 feet in elevation – including Sugarloaf, Old Speck, North Crocker, the Bigelows (West and Avery Peaks), Abraham, The Horn, South Crocker, Redington, and Spaulding – are visible from the summit of Saddleback. On a clear day, visitors can see Mt. Washington 70 miles to the southwest and Katahdin 100 miles to the northeast. To the west is the Rangeley Lakes region; the Boundary Mountains lie on the horizon 60 miles to the north; the Bigelows, Crocker, Sugarloaf, and Mt. Abraham lie to the northeast and east; Mt. Blue, Tumbledown Mountain, Old Speck, and the distant Presidential Range lie to the south and southwest. The town of Rangeley is nestled near the northeastern shore of Rangeley Lake, and the base lodge, condominiums, and portions of the existing Saddleback ski area are visible at some distance and well below the Appalachian Trail on the western slopes of the mountain. The base facilities and condominiums are noticeable man-made elements, but are distant and subordinate to the natural appearance of the surrounding landscape. A portion of the Stagecoach double chairlift and several ski runs are visible from The Horn. Apart from these few visible developments, however, the foreground and middle-ground viewsheds along the Appalachian Trail across the entire ridgeline of Saddleback Mountain appear natural and undisturbed. Most of the existing ski area is hidden from view by several outstretched flanks and the broad expanse of the ridgeline of the mountain.

Photo 3.3 The summit of Saddleback Mountain and the "saddle bowl" as seen from the summit of The Horn

Upon reaching The Horn, the Appalachian Trail turns east and descends steeply towards Saddleback Junior and Poplar Ridge. Within a few hundred yards of The Horn's summit, alpine vegetation gives way to subalpine spruce and fir, which in turn is replaced by taller spruce and fir interspersed with eastern hardwood species. The dramatic long-range views seen from the exposed ridgeline are quickly replaced by a closed canopy forest.

In 1989, the USDA Forest Service conducted a study entitled "A Visual Resource Analysis of the Appalachian National Scenic Trail on Saddleback Mountain," based on application of the agency's Visual Management System. This system (which recently was updated as the Scenery Management System and is described in detail in USDA Forest Service Handbook Number 701, *Landscape Aesthetics: A Handbook for Scenery Management*) has been used by the agency for more than 30 years and is widely accepted by other governmental agencies, private organizations, universities, and the general public as a fair and scientific method for inventorying and analyzing visual resources.

The Forest Service's Visual Management System classifies landscapes by character type, variety class, and sensitivity level. The result of these classifications is a "Visual Quality Objective," which is used to describe the degree of acceptable alteration of the natural landscape. In the 1989 visual resource study of Saddleback Mountain, the Forest Service identified two variety classes for the Saddleback Mountain range. The first class, called "distinctive" or "Variety Class A," reflects the area of unique alpine and subalpine plant associations along the Saddleback Mountain ridgeline, together with the characteristics of the well-defined mountain ridge and

profile. The unusual glacially polished bedrock and glacial erratics also contribute to this designation. The remainder of the area is considered "common," or Variety Class B, which is reflected in the moderately varied mid-slope terrain and continuous vegetative cover of the mountain below the alpine/subalpine zone.

The Forest Service study team then analyzed the visual sensitivity level of the resource. They concluded that the Appalachian Trail had a "sensitivity level 1," or a highest sensitivity rating, based on its formal designation as a national scenic trail. Lastly, the Forest Service identified distance zones, beginning with a "visual foreground zone" ranging up to one-fourth to one-half mile from the Trail, followed by a middle-ground zone extending up to three to five miles from the Trail and a background zone beyond three to five miles from the Trail. (See Tables 3.4. and 3.5.)

Table 3.4 Visual Quality Objectives, from A Visual Resource Analysis of the Appalachian National Scenic Trail on Saddleback Mountain, USDA Forest Service, 1989

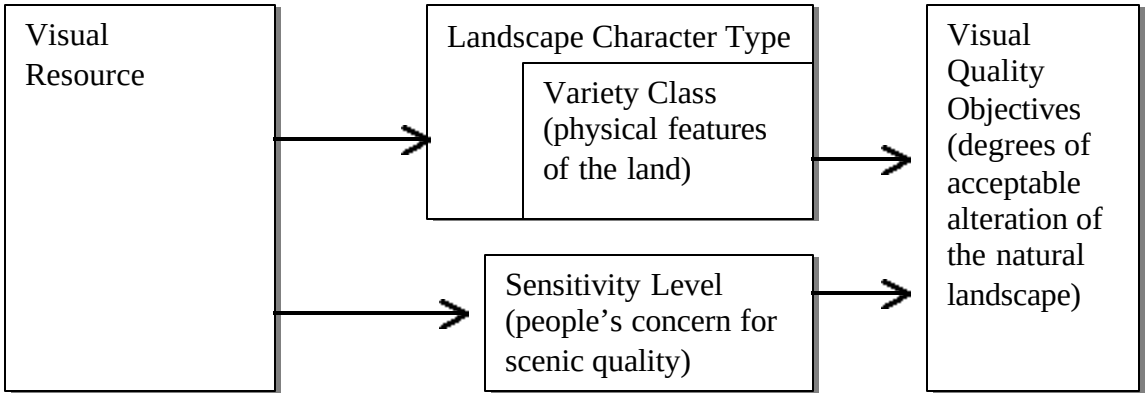


Table 3.5 Visual Sensitivity, Variety Classes, and Visual Quality Objectives, from A Visual Resource Analysis of the Appalachian National Scenic Trail on Saddleback Mountain, USDA Forest Service, 1989"

		Visual Sensitivity*						
		fg1*	**mg1***	**bg1***	**fg2**	**mg2**	**bg2**	**bg3**
Variety Classes	**class A**	R	R	R	PR	PR	PR	PR
	class B	R	PR	PR	PR	M	M	M/MM
	class C	PR	PR	M	M	M	MM	MM

*Visual sensitivity ratings are developed by combining the sensitivity level and the distance zone. The three ratings that apply to the Appalachian National Scenic Trail are foreground-sensitivity level 1 (fg1); middle-ground sensitivity level 1 (mg1); and background-sensitivity level 1 (bg1).

Preservation (P) – This visual quality objective allows for ecological changes only, and is usually applied only in designated wilderness.

Retention (R) - This visual quality objective provides for management activities that are not visually evident. Activities should only repeat form, line, color, and texture that are frequently found in the landscape. Changes in their quantities of size, amount, intensity, direction, and pattern should not be evident.

Partial Retention (PR) – This visual quality objective provides for management activities that remain visually subordinate to the characteristic landscape. Activities should repeat form, line, color, and texture common to the characteristic landscape but changes in their qualities should remain visually subordinate to the characteristic landscape.

Modification (M) – This visual quality objective provides for management activities that may visually dominate the original landscape. However, changes to vegetation and landform should borrow from the established natural form, line, color and texture so completely that the visual characteristics are similar to the surrounding area.

Maximum modification (MM) – Management activities are permitted to dominate the visual landscape.

Using the Visual Management System, the Forest Service study team concluded that two Visual Quality Objectives applied to the visual landscape of the Appalachian Trail on Saddleback Mountain: *Retention*, which for the Appalachian Trail on Saddleback Mountain is associated with the "Foreground Zone"; and *Partial Retention*, which is associated with the "Middle-ground Zone" as observed from the Appalachian Trail. These Visual Quality Objectives for Saddleback Mountain are delineated on Map 3.8.

Based on their analysis, the Forest Service study team arrived at the following conclusions:

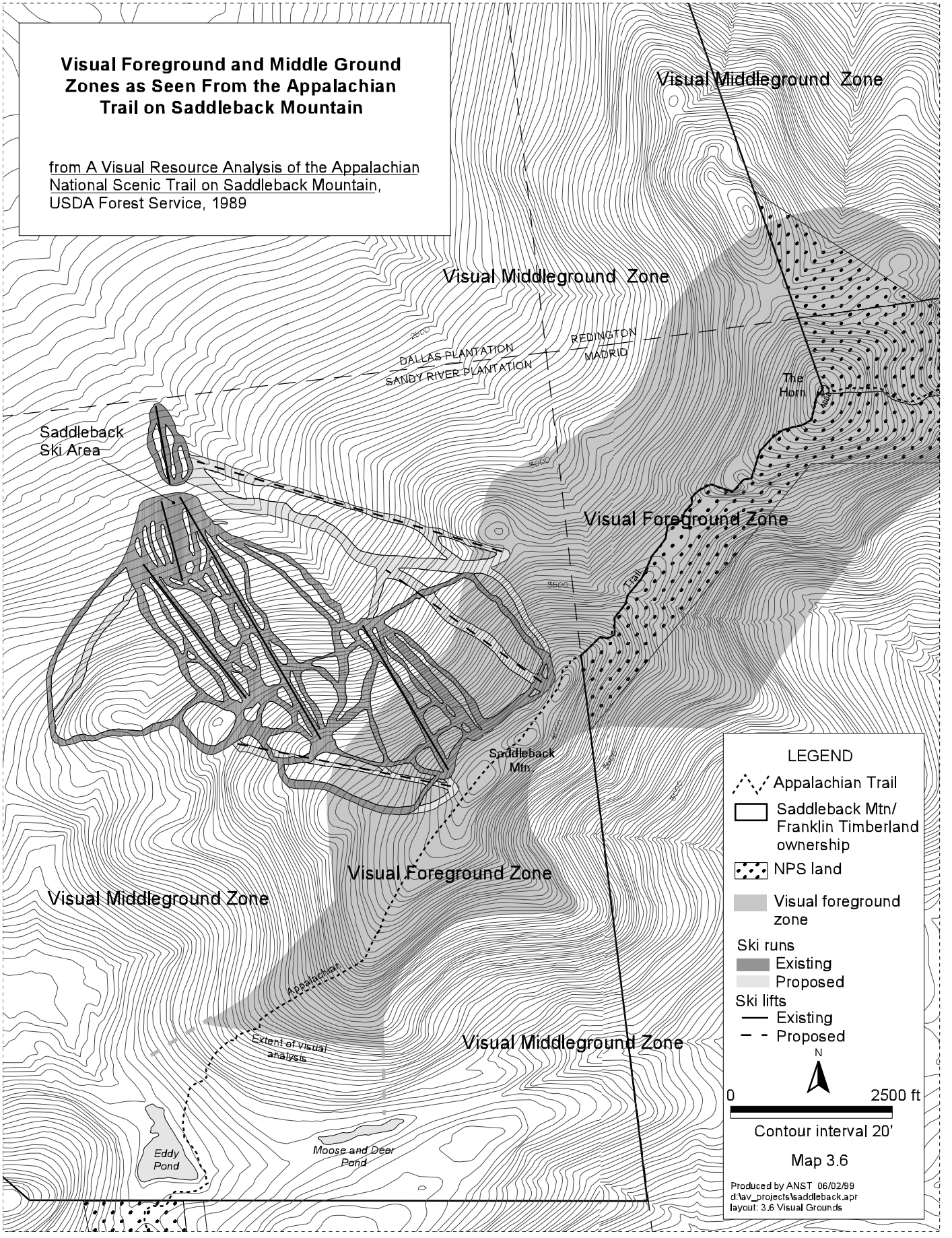
- The "Existing Visual Condition" for the foreground viewshed of the Appalachian Trail on Saddleback Mountain is primarily untouched, while the middle-ground viewshed ranges from untouched to unnoticed.

- The "Foreground Zone" is currently in a pristine condition, where natural ecological changes have been allowed to take place slowly over a long period of time.

- The "Visual Quality Objective" for the foreground zone of the Appalachian Trail across Saddleback Mountain is "retention," which allows for activities which are not visually evident to the casual observer.

- The "Visual Absorption Capacity" of the foreground zone of the Appalachian Trail across Saddleback Mountain is low, which indicates that it would be difficult to manipulate vegetation or introduce structures into the viewshed corridor without changing the existing visual condition.

- The location of ski area facilities in close proximity to the Appalachian National Scenic Trail has the potential to create substantial visual conflict by changing the Existing Visual Condition from untouched and unnoticed to a disturbed condition.


Visual Foreground and Middle Ground Zones as Seen From the Appalachian Trail on Saddleback Mountain
from A Visual Resource Analysis of the Appalachian National Scenic Trail on Saddleback Mountain, USDA Forest Service, 1989
Visual Middleground Zone
Visual Middleground Zone
DALLAS PLANTATION
SANDY RIVER PLANTATION
REDINGTON
MADRID
The Horn
Saddleback Ski Area
Visual Foreground Zone
Trail
Saddleback Mtn.
Visual Foreground Zone
Visual Middleground Zone
Appalachian
Extent of visual analysis
Visual Middleground Zone
Eddy Pond
Moose and Deer Pond
LEGEND
Appalachian Trail
Saddleback Mtn/ Franklin Timberland ownership
NPS land
Visual foreground zone
Ski runs
Existing
Proposed
Ski lifts
Existing
Proposed
N
0
2500 ft
Contour interval 20'
Map 3.6
Produced by ANST 06/02/99
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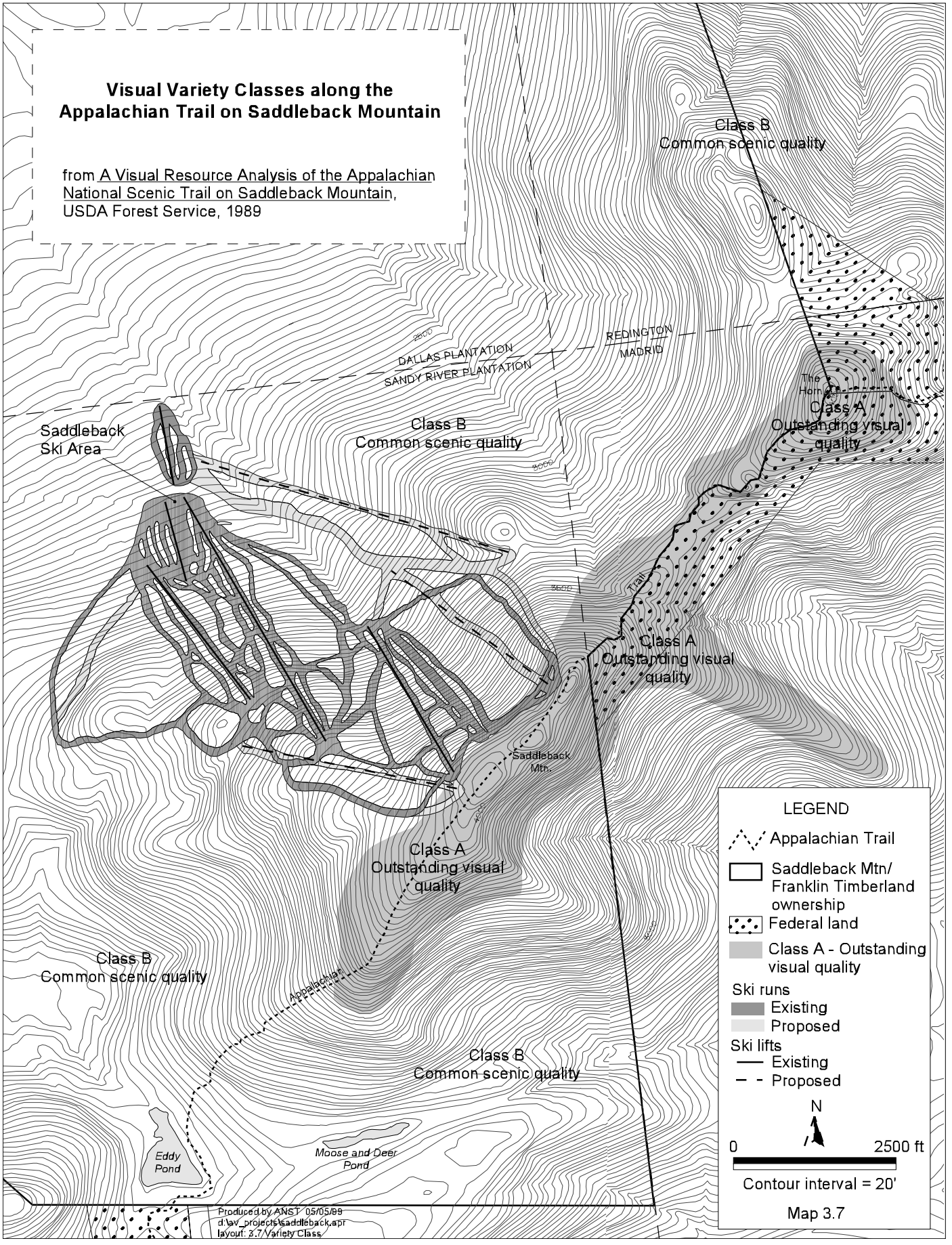
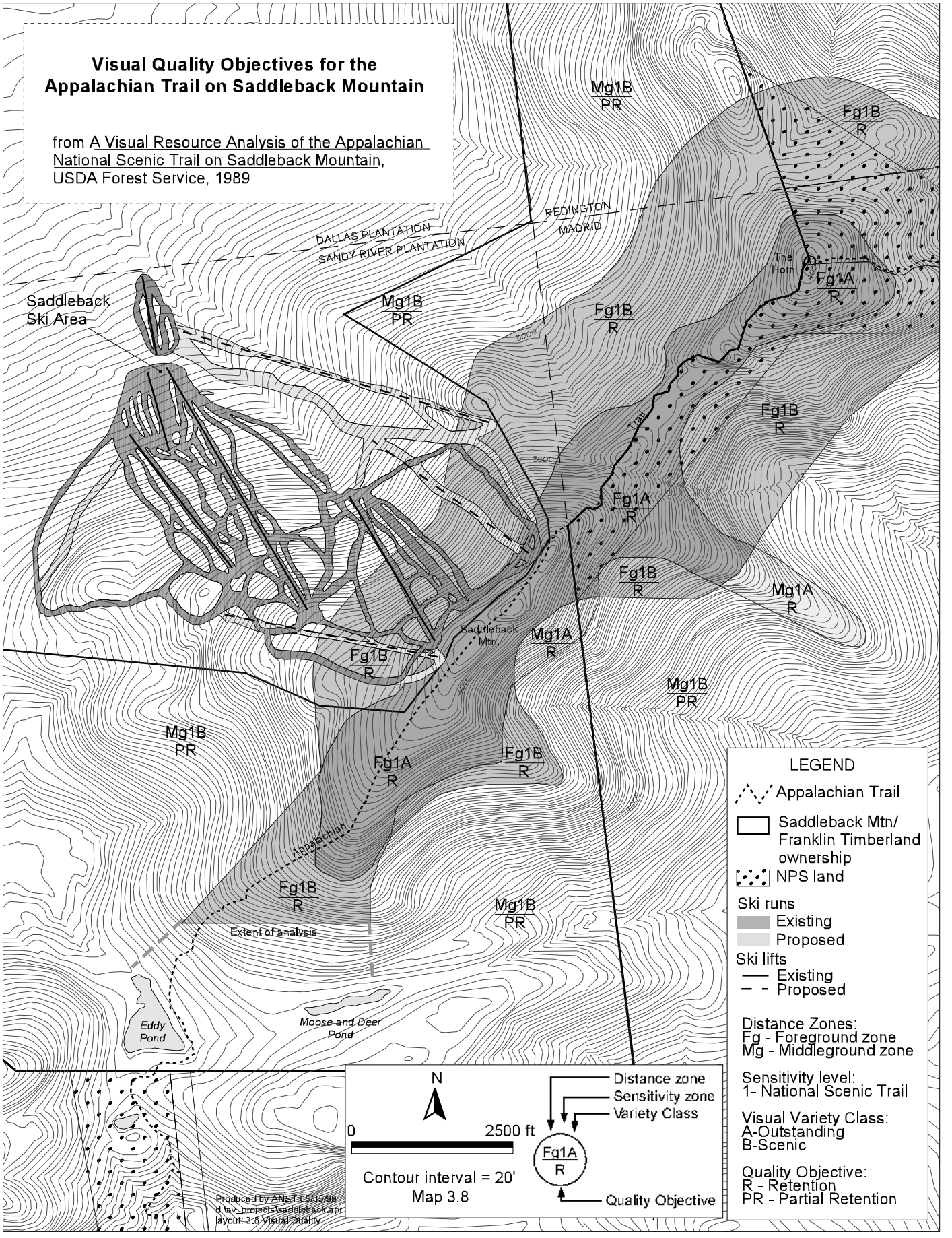
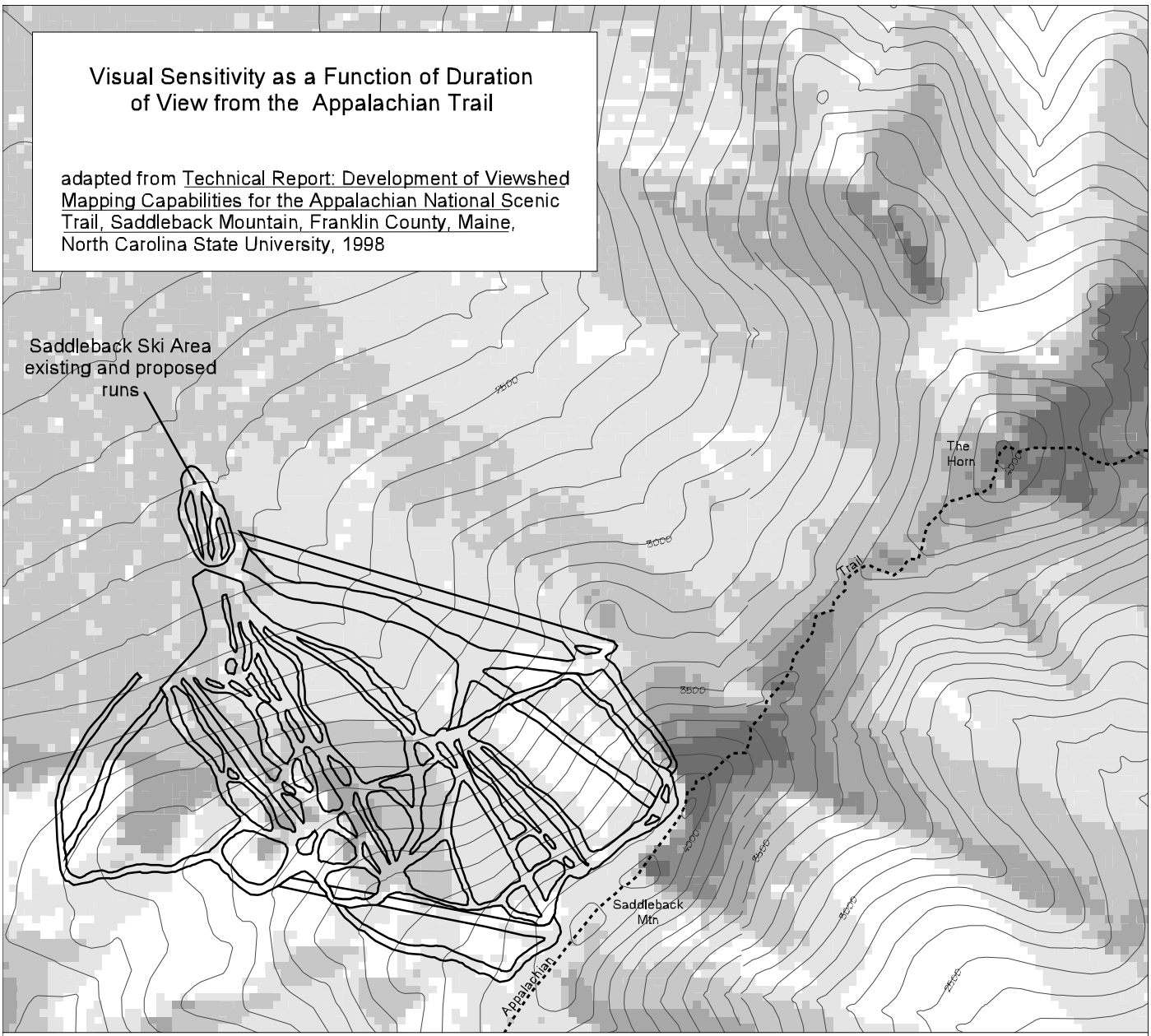
layout: 3.6 Visual Grounds


Visual Variety Classes along the Appalachian Trail on Saddleback Mountain
from A Visual Resource Analysis of the Appalachian National Scenic Trail on Saddleback Mountain, USDA Forest Service, 1989
Class B Common scenic quality
DALLAS PLANTATION
SANDY RIVER PLANTATION
REDINGTON
MADRID
2500
3000
3500
4000
4500
Saddleback Ski Area
Class B Common scenic quality
The Horn
Class A Outstanding visual quality
Trail
Class A Outstanding visual quality
Saddleback Mtn.
Class A Outstanding visual quality
Class B Common scenic quality
Appalachian
Class B Common scenic quality
Eddy Pond
Moose and Deer Pond
Produced by ANST 05/05/99
d:\av_projects\saddleback.apr
layout: 3.7 Variety Class
LEGEND
Appalachian Trail
Saddleback Mtn/ Franklin Timberland ownership
Federal land
Class A - Outstanding visual quality
Ski runs
Existing
Proposed
Ski lifts
Existing
Proposed
N
0
2500 ft
Contour interval = 20'
Map 3.7


Visual Quality Objectives for the Appalachian Trail on Saddleback Mountain
from A Visual Resource Analysis of the Appalachian National Scenic Trail on Saddleback Mountain, USDA Forest Service, 1989
Mg1B PR
Fg1B R
REDINGTON
MADRID
DALLAS PLANTATION
SANDY RIVER PLANTATION
The Horn
Fg1A R
Saddleback Ski Area
Mg1B PR
Fg1B R
3000'
Trail
3500'
Fg1A R
Fg1B R
Mg1A R
Saddleback Mtn.
Mg1A R
Fg1B R
Mg1B PR
Mg1B PR
Fg1A R
Fg1B R
Appalachian Trail
Fg1B R
Mg1B PR
Extent of analysis
Eddy Pond
Moose and Deer Pond
LEGEND
Appalachian Trail
Saddleback Mtn/ Franklin Timberland ownership
NPS land
Ski runs
Existing
Proposed
Ski lifts
Existing
Proposed
Distance Zones:
Fg - Foreground zone
Mg - Middleground zone
Sensitivity level:
1- National Scenic Trail
Visual Variety Class:
A-Outstanding
B-Scenic
Quality Objective:
R - Retention
PR - Partial Retention
N
0
2500 ft
Contour interval = 20'
Map 3.8
Fg1A R
Distance zone
Sensitivity zone
Variety Class
Quality Objective
Produced by ANST 05/05/99
d:\av_projects\saddleback.apr
layout: 3.8 Visual Quality

Visual Sensitivity as a Function of Duration of View from the Appalachian Trail

adapted from Technical Report: Development of Viewshed Mapping Capabilities for the Appalachian National Scenic Trail, Saddleback Mountain, Franklin County, Maine, North Carolina State University, 1998



N

Contour interval = 100'

0 1000 2000 Feet

Analysis adapted from Fels, John E. 1998. Development of Viewshed Mapping Capabilities for the Appalachian National Scenic Trail: Saddleback Mountain, Franklin County, Maine.

Digital elevation data provided by North Carolina State University. Location of Appalachian Trail taken from USGS 7.5' maps.

Duration of visibility based on average hiking speed of two miles per hour.

Visibility from the Appalachian Trail

Trail length affected (miles)	Duration of visibility (hours)
<0.5	<0.25
0.5-1.0	0.25-0.5
1.0-1.5	0.5-0.75
1.5-2.0	0.75-1.0
>2.0	>1.0

Appalachian Trail

Map 3.9

Produced by ANST 06/02/99
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layout: 3.9 viewshed

In 1998, North Carolina State University conducted a computer-based study of areas that were visible from the Appalachian Trail on Saddleback Mountain. Using digital-elevation modeling, the study analyzed the landscape to determine which areas were visible for varying lengths of time, based on the assumption that those areas visible for the longest duration of time would be more visually sensitive than areas seen only for a short duration. The study also created an interactive viewshed mapper, which allows the user to identify areas that are visible from any given point along the Appalachian Trail. The results of the study, which are depicted on Map 3.9, indicate that the summits of Saddleback Mountain, The Horn, and the 3,772-foot peak are visible for the longest duration of time, with the ridgeline between the summits of Saddleback Mountain and The Horn also visible for an extended period of time.

Vegetation and Natural Communities

A total of nine distinct natural communities have been identified within the study area, based on aerial photography and existing data. Four of these communities are considered to be important or significant natural communities. The locations of each of these natural communities are shown on Map 3.11. The significant natural communities are described in detail below. Two of these communities – the alpine bog-meadow and the alpine ridge communities – are considered to be imperiled in Maine because of their rarity (6-20 occurrences or few remaining communities or acres) and other factors making them vulnerable to further decline. Two others – krummholz and subalpine spruce-fir forest – are considered rare, with less than 100 identified occurrences in the state of Maine.

Another significant natural community, the spruce woodland community, occurs outside the study area on the eastern slopes of Saddleback Mountain. The remaining communities within the study area – monomictic mesotrophic lake, shrub swamp/graminoid swale wetland, spruce slope/early successional forest, and spruce slope forest – are relatively common in Maine.

Table 3.10 Significant natural communities found on Saddleback Mountain, from An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January 1999

Name of Natural Community	State Rank*	Element Occurrence Rank*	Number of Documented State Occurrences*
alpine bog-meadow	S2	C	0**
alpine ridge	S2	A	17
krummholz	S3	B	7
subalpine spruce-fir forest	S3	B	28

*See Appendix A for an explanation of the Maine Natural Areas Program state ranking system and the element occurrence ranking values. These rankings are tentative, pending further review and analysis.
**Alpine bog meadows are known to occur on Katahdin and in the Mahoosuc Range. However, these communities have not been sampled utilizing Maine Natural Areas Program procedures and have not been documented in the Natural Areas Program database.

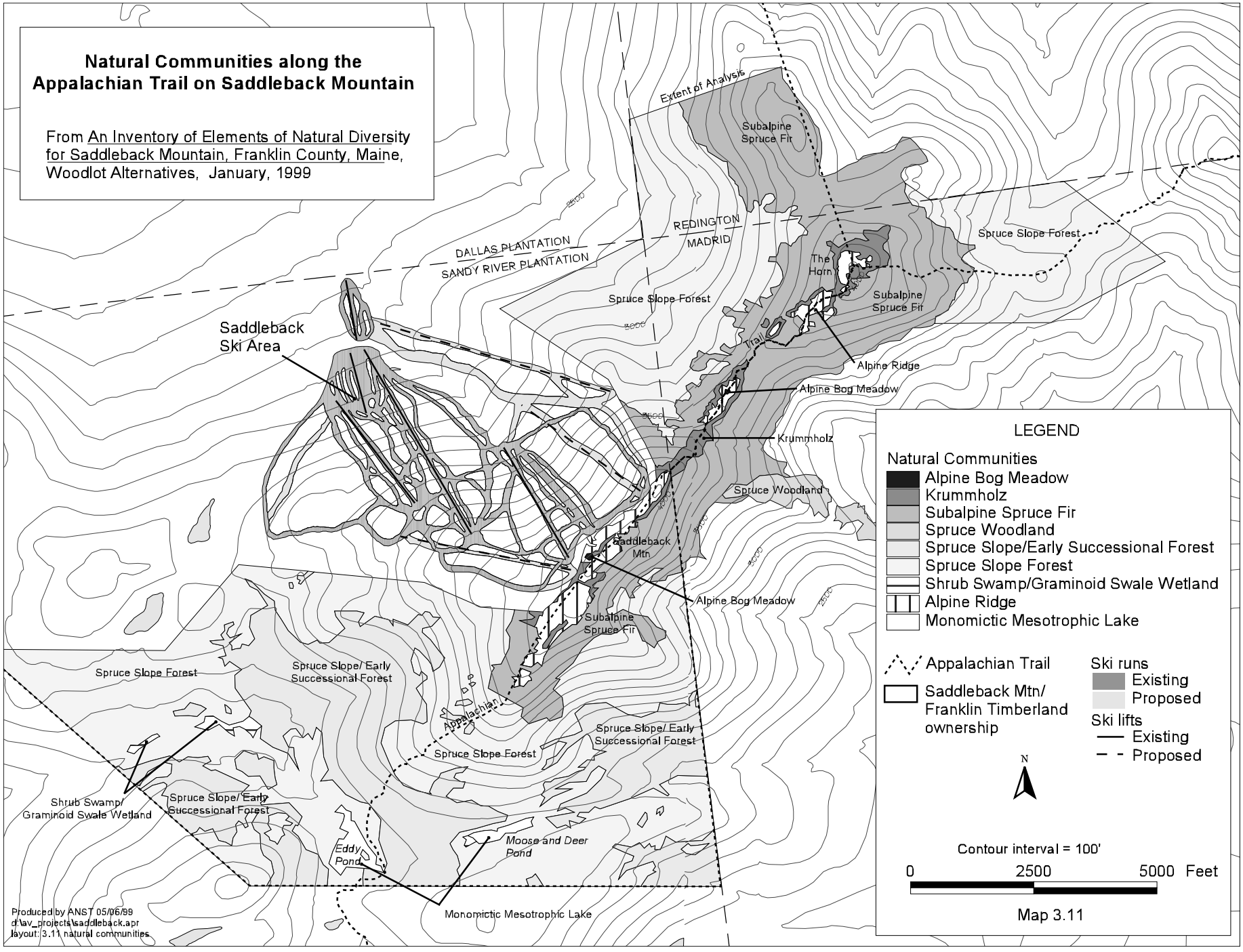
Alpine bog-meadow community: Alpine bog-meadows are high elevation wetlands that are sometimes associated with small pools. They are defined by the Maine Natural Areas Program as "high elevation bogs or wet meadows that typically are formed in small basins or on gently sloping terrain." According to the Maine Natural Areas Program, most alpine bog-meadows are fed by fog, precipitation, and water draining from alpine ridges. Meadow-like areas fed by alpine springs are less common.

Vegetation in alpine bog-meadow communities is dominated by low shrubs, such as *Kalmia polifolia* (bog laurel), *Chamaedaphne calyculata* (leather leaf), *Rhododendron groenlandicum* (Labrador tea), and graminoids such as *Eriophorum vaginatum* (cotton-grass), *Carex bigelowii* (Bigelow's sedge), and *Trichophorum cespitosum* (deer's hair sedge) growing in *Sphagnum spp.* (peat moss). *Rubus chamaemorus* (baked apple-berry) and *Geocaulon lividum* (northern comandra), which was listed as rare in Maine in 1996 but has since been dropped from the state status list, may occur in this community. In addition, *Vaccinium oxycoccos* (bog cranberry) is a common member of this community.

Two small alpine bogs occur on the Saddleback Mountain range. One sits high on the ridgeline several hundred feet southwest of the summit, near the intersection of the access trail from the ski area and the Appalachian Trail. This bog possesses a small body of water and a well-developed bryophyte layer. The other alpine bog sits in the "saddle" northeast of the summit. This small bog is dominated by graminoid vegetation and one state-ranked (threatened) species – *Hierochloe alpina* (alpine holy grass) – occurs here. Both of the examples of this community on the Saddleback Mountain range are small and either are located adjacent to, or are bisected by, foot trails. The soils are comparatively thin and are susceptible to mechanical damage. The plants that occur in these communities are not able to tolerate heavy or continued disturbance.

Alpine ridge community: Alpine ridges are open communities occurring at elevations exceeding 3,500 feet (1067 meters) above mean sea level. Trees, if present, are infrequent, depressed, and misshapen due to wind and ice scour. Soils vary from bedrock, scree, and gravel, to organic folists in more sheltered areas. Alpine ridges are defined by the Maine Natural Areas Program as "exposed, windswept mountain summits, ridges, and tablelands dominated by bedrock; in some areas (*e.g.*, the tablelands of Katahdin), the rock has become fragmented into scree due to repeated freezing and thawing."

According to the Maine Natural Areas Program, vegetation in alpine ridge communities is mostly confined to protected microsites among the rocks, and is dominated by *Vaccinium uliginosum* (bilberry), *Juncus trifidus* (highland rush), and *Cetraria islandica* (Iceland lichen). Associated species vary according to exposure. Somewhat protected sites feature *Carex bigelowii* (Bigelow's sedge), while the most exposed areas are characterized by *Diapensia lapponica* (diapensia), *Sibbaldiopis tridentata* (three-toothed cinquefoil), and *Minuartia groenlandica* (mountain sandwort). *Betula glandulosa* (dwarf birch), *Salix herbacea* (dwarf willow), and *Hierochloe alpina* (alpine holy grass) may also be found in this community. *Solidago multiradiata* var. *arctica* (Cutler's goldenrod) and *Agrostis mertensii* (boreal bentgrass) may be present in more exposed areas. *Carex bigelowii*, *Diapensia lapponica*, *Minuartia groenlandica*, and *Hierochloe alpina* are considered rare.


Natural Communities along the Appalachian Trail on Saddleback Mountain
From An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January, 1999
Extent of Analysis
DALLAS PLANTATION
SANDY RIVER PLANTATION
REDINGTON
MADRID
Saddleback Ski Area
Subalpine Spruce Fir
Spruce Slope Forest
The Horn
Alpine Ridge
Alpine Bog Meadow
Krummholz
Spruce Woodland
Saddleback Mtn
Appalachian Trail
Spruce Slope/ Early Successional Forest
Shrub Swamp/ Graminoid Swale Wetland
Eddy Pond
Moose and Deer Pond
Monomictic Mesotrophic Lake
LEGEND
Natural Communities
Alpine Bog Meadow
Krummholz
Subalpine Spruce Fir
Spruce Woodland
Spruce Slope/Early Successional Forest
Spruce Slope Forest
Shrub Swamp/Graminoid Swale Wetland
Alpine Ridge
Monomictic Mesotrophic Lake
Appalachian Trail
Saddleback Mtn/ Franklin Timberland ownership
Ski runs
Existing
Proposed
Ski lifts
Existing
Proposed
N
Contour interval = 100'
0
2500
5000 Feet
Map 3.11
Produced by ANST 05/06/99
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layout: 3.11 natural communities

The soils in alpine ridge communities are comparatively thin and susceptible to damage. A few of the plants may be able to tolerate disturbance, such as *Minuartia groenlandica* (mountain sandwort), which normally grows in loose soil of recently exposed gravels (*e.g.*, slides). Many of the alpine plant species present in this community require relatively snow-free conditions, as would normally be created by wind scour, to facilitate an early start to a short growing season.

Within the study area, the alpine ridge community is confined to the high ridgeline of Saddleback Mountain, much of the "saddle," and the southwest slope of The Horn. Four species of state-ranked plants occur within the community: *Carex bigelowii* (Bigelow's sedge), *Diapensia lapponica* (diapensia), *Minuartia groenlandica* (mountain sandwort), and *Vaccinium boreale* (sweet hurts). Because of its large size, limited anthropogenic impacts, and resident rare species, this alpine ridge community is considered to be an outstanding example of its type in Maine.

In its 1989 decision, the Maine Land Use Regulation Commission specifically noted the importance of the "alpine tundra vegetation" on the ridge of Saddleback Mountain. According to LURC,

> Areas of alpine tundra vegetation are rare in Maine. There are only eight mountains with alpine communities in Maine. Of those eight mountains, Saddleback Mountain ranks sixth in size and third in the number of arctic-alpine species, with 19 of 34 such species that occur in Maine. Three tundra species present on Saddleback Mountain, Alpine Sedge (*Carex bigelowii*), Highland Rush (*Juncus trifidus*), and Diapensia (*Diapensia lapponica*) are rare statewide, but have distribution in far northern regions elsewhere on the globe. This alpine area is a registered Critical Area under the State of Maine Critical Areas Program.

While *Juncus trifudus* is no longer considered rare, several other alpine plant species have been found on Saddleback Mountain that are considered to be rare.

Krummholz community: This community represents the upper elevation limit at which trees are dominant members of the vascular flora. It grades down-slope into subalpine spruce-fir forests as weather conditions become less extreme and soils become relatively deeper. Krummholz is described by the Maine Natural Areas Program as a "dense mass of mostly coniferous shrub-like trees at high elevations above treeline, with thin cryic soils and constant exposure to wind causing stunted and flagged growth." Trees in krummholz communities are typically less than five feet (1.5 meters) tall. *Abies balsamea* (balsam fir) is dominant; *Picea mariana* (black spruce) and *Betula cordifolia* (heart-leaved paper birch) are common associates.

The krummholz community within the study area occurs adjacent to the open alpine areas of Saddleback Mountain, the "saddle," and The Horn. It is found on the mountain slopes, just

below the ridgeline, and in protected dips and banks within the alpine ridge community. One species of state-ranked plants, *Geocaulon lividum* (northern comandra), is found in this community on Saddleback Mountain. It occurs in a small, heath-filled opening in the krummholz.

Subalpine spruce-fir forest community: Subalpine spruce-fir forests are comprised of relatively short trees with little or no marketable qualities. This community grades up-slope into krummholz and down-slope into spruce slope forests, and therefore it is sometimes difficult to determine exact community boundaries.

According to the Maine Natural Areas Program, subalpine spruce-fir forests are defined as "low-diversity coniferous forests of high elevations, generally above 2,952 feet (900 meters) above sea level, which occur both on level ridgetops and on steep, stony, upper slopes." The dominant tree is *Abies balsamea (*balsam fir). Common associates are *Picea rubens* (red spruce), *Betula cordifolia* (heart-leaved paper birch) and *Sorbus decora* (showy mountain ash). Wind damage is common and often widespread, resulting in a patchy but dense shrub layer of young *Sorbus americana* (American mountain-ash), *Viburnum lantanoides* (hobblebush), and *Rubus* (blackberries and raspberries). "Fir-wave" forests are one particular manifestation of this community type.

Rubus ideaus (red raspberry) is the most common member of the genus *Rubus* (raspberries and blackberries) in this community, though *Rubus setosus* (bristly blackberry), and, in wetter areas, *Rubus canadensis* (Canada blackberry) are also sometimes present.

Much of the upper slopes of Saddleback Mountain range and The Horn is occupied by subalpine spruce-fir forest. This community also forms the upper elevation forests of the "saddle" and the ridge between The Horn and Potato Nubble. The community is of comparatively large size, with approximately 638 acres of subalpine spruce-fir within the study area. One rare plant species, *Viburnum edule* (squashberry), is located in the community outside of the project boundary.

Rare Plant Species

Introduction: A total of seven plant species that are listed as rare, threatened, or endangered by the Maine Natural Areas Program (Maine Natural Areas Program listing of May 22, 1997) are known to occur on the Saddleback Mountain Range. Six of them occur in alpine or boreal settings within the study area: *Carex bigelowii* (Bigelow's sedge); *Diapensia lapponica* (diapensia); *Geocaulon lividum* (northern comandra); *Hierochloe alpina* (alpine holy grass); *Minuartia groenlandica* (mountain sandwort); and *Vaccinium boreale* (sweet hurts). *Viburnum edule* (squashberry) also occurs outside of the project boundary at the edge of a ski trail within the subalpine spruce-fir forest zone. A complete listing of alpine plant species that have been documented by herbarium specimens (at the University of Maine Herbarium) or by direct observation since 1978 is provided in Appendix B.

Table 3.12 State-ranked rare plant species that have been previously documented on Saddleback Mountain, from An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January 1999

Scientific Name	Common Name	Global Rank*	State Rank*	State Status*	Federal Status*	Element Occurrence Rank*
Carex bigelowii	Bigelow's sedge	G5	S2			B
Diapensia lapponica	diapensia	G5	S2			B
Geocaulon lividum	northern comandra	G5	S2			C
Hierochloe alpina	alpine holy grass	G5	S1	T		B
Minuarta groenlandica	mountain sandwort	G5	S3			B
Vaccinium boreale	sweet hurts	G3	S1	E		C

*See Appendix A for an explanation of the Maine Natural Areas Program global and state ranking system, Federal and state status, and the element occurrence ranking values.

Carex Bigelowii: Carex bigelowii (Bigelow's sedge) is typically found in alpine ridge communities, alpine meadows, and alpine bogs where woody vegetation is absent. Its global distribution is circumboreal; in North America it is found as far south as the high mountains of Maine, New Hampshire, Vermont, and New York, and as far west as Alaska. In Maine, *Carex bigelowii* is found only on mountains exceeding 3,000 feet (910 meters) in elevation in the western and central parts of the state. *Carex bigelowii* has been documented in 13 townships in Maine. In the Saddleback Mountain range, *Carex bigelowii* occurs sporadically throughout the alpine ridge community. It is most prevalent in wetter areas away from disturbance where it can form small lawns. The population on Saddleback Mountain is distributed over a large area throughout the relatively pristine alpine ridge community.

Diapensia lapponica: Diapensia lapponica (diapensia) is a low shrub found on exposed, windswept, rocky or turfy alpine ridges and slopes. Its distribution is circumboreal. In eastern North America, it is limited to the high mountains of Maine, New Hampshire, Vermont, and New York. It is found at elevations above 3,500 feet (1067 meters) above sea level in western and central Maine. *Diapensia lapponica* has been documented from seven townships in Maine. *Diapensia lapponica* has been found throughout the alpine ridge community on Saddleback Mountain, the "saddle," and The Horn.

Geocaulon lividum: Geocaulon lividum (northern comandra) is a small, inconspicuous herb found in mesic to hydric, cold organic soils. Its global distribution on the North American continent extends as far east as Labrador, as far south as Maine, and as far west as Alaska. In Maine, *Geocaulon lividum* is found only on high mountain slopes in the western and central portion of the state and in a few downeast coastal bogs. *Geocaulon lividum* has been

documented in six townships in Maine. Only one small population of *Geocaulon lividum* has been found on Saddleback Mountain, though others may exist.

Hierochloe alpina: *Hierochloe alpina* (alpine holy grass) is one of the few grasses occurring above treeline in Maine, growing in both hydric and mesic alpine habitats.
It is found on alpine ridges and in alpine meadows and bogs where woody vegetation is absent. Its range is circumboreal, and it is found as far south in eastern North America as the high mountains of Maine, New Hampshire, Vermont, and New York. In Maine, it is been found only on mountains exceeding 3,500 feet (1067 meters) of elevation in western and central Maine. *Hierochloe alpina* has been documented from four townships in Maine. One population of *Hierochloe alpina* has been found on Saddleback Mountain.

Minuartia groenlandica: *Minuartia groenlandica* (mountain sandwort) is a small, delicate annual flower found in loose, exposed or disturbed gravels of alpine ridges. Globally, it is found on the North American continent as far east and north as Greenland, as far south as Maine, and as far west as New York. Several small disjunct populations exist in the mountains of North Carolina. *Minuartia groenlandica* is usually found at elevations of 3,500 feet (1067 meters) above sea level or higher in western and central Maine, though a few isolated occurrences have been found at lower elevations. *Minuartia groenlandica* has been documented from approximately 12 townships in Maine (some confusion exists in the scientific community regarding this species and its close relative *Minuartia glabra*). *Minuartia groenlandica* is found throughout the alpine ridge community on Saddleback Mountain, the "saddle," and The Horn. A large number of individuals have been found at the site, scattered over a relatively large area.

Vaccinium boreale: *Vaccinium boreale* (sweet hurts) is a diminutive blueberry whose habitat is restricted to exposed rocky or ledgy areas in alpine and subalpine areas and coastal mountains and headlands. It is similar to *Vaccinium angustifolium*, the common low sweet blueberry, and is frequently confused with it. *Vaccinium boreale* has narrower leaves (2.0-6.0 mm wide), smaller flowers, shorter stems, and flowers ten to 15 days earlier than *Vaccinium angustifolium*. Its global range extends as far east and north as Newfoundland and Quebec, as far south as the mountains of Maine and New Hampshire, and as far west as New York. In Maine, it is limited to the mountains of the western and central portion of the state, the open, rocky summits of Mount Desert Island, and in one coastal bog in far downeastern Maine. *Vaccinium boreale* has been documented in five townships in Maine. Only a few individual plants of *Vaccinium boreale* have been found on Saddleback Mountain, though others may exist.

The plant species listed above have been documented in previously existing records (Haines 1999), and further research may identify other rare plant species in addition to more extensive populations of these species. Specifically, the rare plant species listed in Table 3.13 are known to occur in the western mountains of Maine and are likely candidates for discovery on Saddleback Mountain. On-the-ground field surveys are needed to confirm the presence or absence of these species.

Table 3.13 State-ranked rare plant species that are likely candidates for discovery on Saddleback Mountain, from An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January 1999

Scientific Name	Common name	State Ranking*	Community	Micro-habitat
Agrostis mertensii	boreal bentgrass	S2	alpine ridge	dry, often rocky, exposed areas
Huperzia appalachiana	Appalachian firmoss	S2	alpine ridge, acidic summit	shaded crevices in exposed environments
Omalotheca sylvatica	northern cudweed	S3	spruce slope forest, mixed hardwood-conifer forest	disturbed soil, edges of clearing
Potamogeton confervoides	alga-like pondweed	S2	tarn, monomictic mesotrophic lake	shallow water with firm to mucky soils
Prenanthes boottii	Boott's rattlesnake root	S2	alpine ridge	exposed, dry to moist areas
Prenanthes nana	dwarf rattlesnake root	S2	alpine ridge, snowbank community	exposed, dry to moist areas
Solidago multiradiata var. *arctica*	Cutler's goldenrod	S2	alpine ridge	exposed, dry to moist areas

*See Appendix A for an explanation of the Maine Natural Areas Program state ranking system.

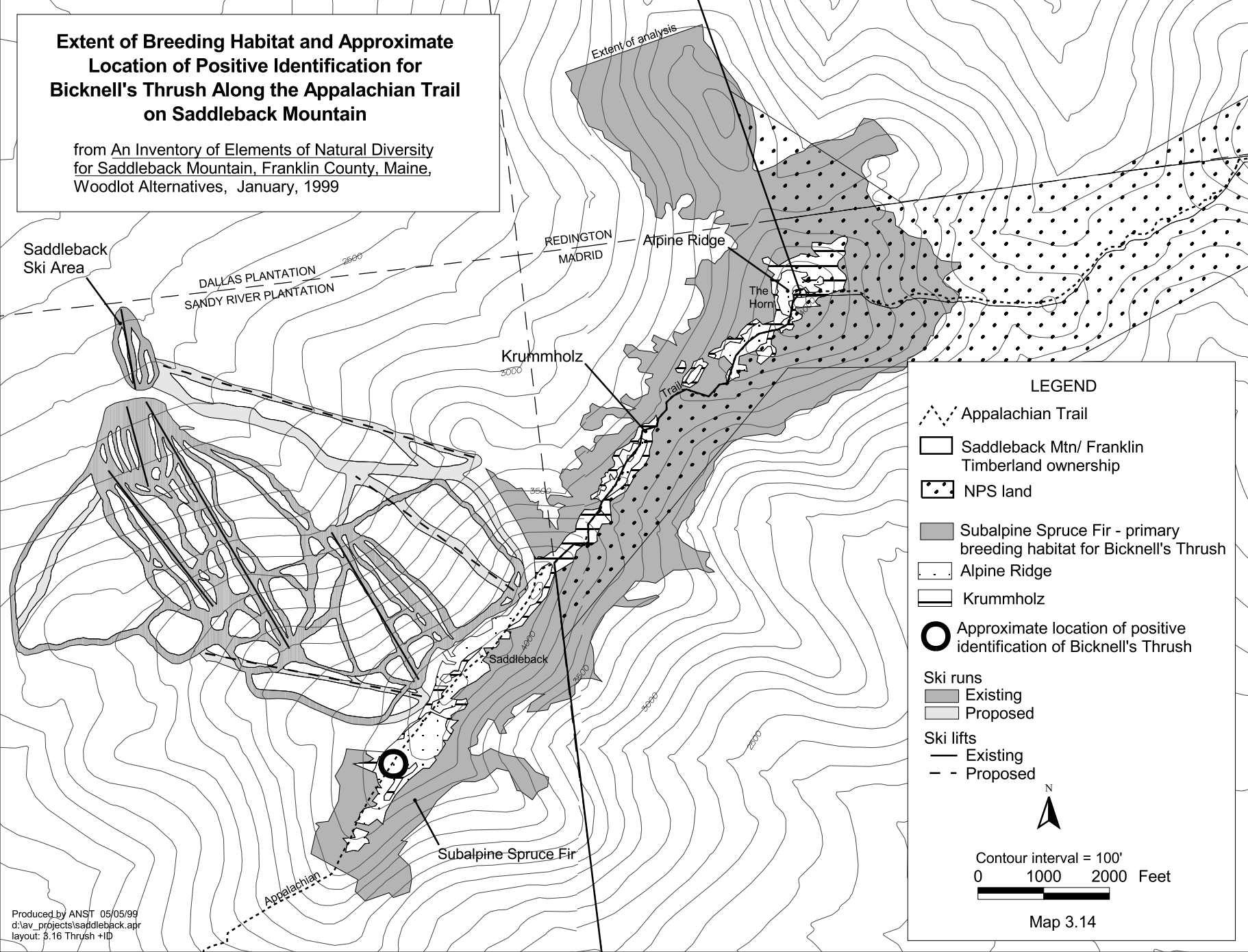
Rare Animal Species

Bicknell's thrush (*Catharus bicknellii*): Saddleback Mountain provides habitat for one known rare animal: Bicknell's thrush. A gray-brown migratory songbird that is best differentiated from other species by its distinctive song, Bicknell's thrush was found in 28 locations along the Saddleback Mountain Range in a study conducted in 1992 and 1993. Twenty-four of the occurrences were identified within the subalpine spruce-fir forest community; two other occurrences were in krummholz, and two others were in the upper elevations of the spruce slope and northern hardwood forest types near the boundaries of the subalpine spruce-fir forest community. An additional sighting among scattered krummholz in the alpine ridge community was documented in 1996. (See Map 3.14.)

The breeding range of Bicknell's thrush extends from Labrador to Quebec and south as far as Massachusetts and New York (Ouellet, 1993). Bicknell's thrush winters on the islands in the Caribbean. In the northeastern United States, Bicknell's thrush is found primarily in high-elevation coniferous forests. Its upper montane spruce-fir breeding habitat constitutes a limited and increasingly vulnerable habitat (Rimmer 1998). (See Map 3.15.)

Extent of Breeding Habitat and Approximate Location of Positive Identification for Bicknell's Thrush Along the Appalachian Trail on Saddleback Mountain

from An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January, 1999



Map 3.14

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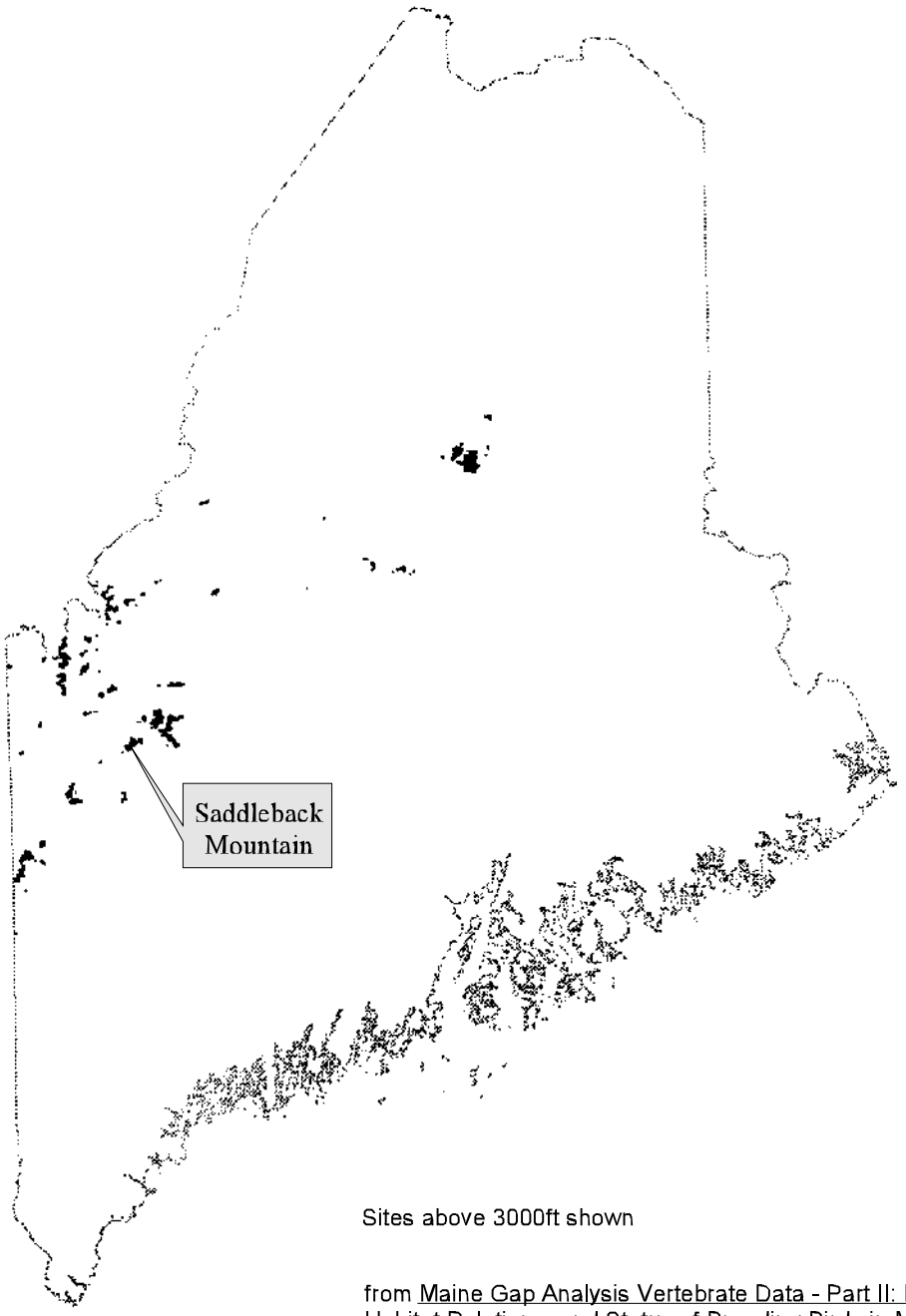
Potential Bicknell's Thrush Habitat in Maine



Sites above 3000ft shown

from Maine Gap Analysis Vertebrate Data - Part II: Distribution, Habitat Relations, and Status of Breeding Birds in Maine, Boone, R.B. and W.B. Krohn, Maine Cooperative Fish and Wildlife Research Unit and Department of Wildlife Biology, University of Maine, Orono, 1998

Map 3.15

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Table 3.16 Rare animal species documented on Saddleback Mountain, from An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January 1999

Species	State status*	Community	Micro-habitat
Catharus bicknellii (Bicknell's thrush)	species of special concern, 1996	subalpine spruce-fir forest	dense forested areas near tree-line

*See Appendix A for an explanation of the Maine Natural Areas Program state ranking system.

Formerly listed by the U.S. Fish and Wildlife Service as a Category 2 candidate species under the Endangered Species Act (Atwood *et al*, 1996), Bicknell's thrush is currently ranked as the top conservation priority among neotropical migratory birds in the northeastern United States (Rosenberg and Wells, 1995). Bicknell's thrush also has been proposed as threatened in Canada by the Committee on the Status of Endangered Wildlife. In 1996, it was added to the State of Maine's revised list of special concern species by the Maine Department of Inland Fisheries and Wildlife. The combination of the species' small population size, the lack of baseline scientific knowledge about the species, and documented threats to its rangewide habitats suggest that Bicknell's thrush should be considered seriously at risk (Rimmer 1998).

Suitable nesting habitat of this species in the United States has been described as dense forests of balsam fir (*Abies balsamea*) and red spruce (*Picea rubens*) occurring near tree-line (Wallace (1939). Atwood *et al* (1996) found that 96% of the sites occupied by Bicknell's thrush in New England and New York were dominated by varying mixtures of balsam fir (*Abies balsamea*) and red spruce (*Picea rubens*), and 91% of the sites were above 3,000 feet in elevation. Surveys in 294 other areas without these characteristics failed to encounter Bicknell's thrush at any location. This survey and other data indicate that subalpine spruce-fir forests are important for Bicknell's thrush and practices that maintain high-elevation spruce-fir forests are beneficial to the species (Haines 1999).

Other Rare Animal Species: Four other species of animals that are listed as rare in Maine have been documented on nearby mountains in western Maine, and it is possible that these species also are present on Saddleback Mountain. Bird and small mammal surveys would be needed to determine the presence or absence of these species. These species are listed in Table 3.17.

Table 3.17 Rare animal species that may be present on Saddleback Mountain, from An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January 1999

Species	State status*	Community	Micro-habitat
Microtus chrotorrhinus (yellow-nosed vole)	species of special concern, 1996	subalpine spruce-fir forest, spruce slope forest, northern hardwood forests	crevices among shaded rocks
Picoides tridactylus (northern three-toed woodpecker)	species of special concern, 1996	subalpine spruce-fir forest, spruce slope forest	forested areas
Sorex dispar (long-tailed shrew)	species of special concern, 1996	subalpine spruce-fir forest, spruce slope forest	cool, moist, rocky sites in areas with deciduous tree components
Synaptomys borealis (northern bog-lemming)	threatened	krummholz, subalpine spruce-fir forest, spruce slope forest	wet areas with mosses and sedges

*See Appendix A for an explanation of the Maine Natural Areas Program state ranking system.

Wildlife

Though no recent studies of wildlife are available, wildlife is abundant in the study area. Bird and mammal surveys are needed to determine the presence or absence of specific species. Table 3.18 lists animal species that are known or suspected to occur in the boreal and alpine habitats of the Saddleback Mountain Range.

Water Resources

The Appalachian Trail footpath follows the eastern perimeter of Eddy Pond, a relatively pristine nine-acre pond at the base of the southwestern ridgeline of Saddleback Mountain. Moose and Deer Pond, a shallow four-acre pond influenced by beaver activity, is located approximately 2,000 feet east of the Trail. (See Map 3.19.)

Table 3.18 Animals that are known or suspected to occur on the Saddleback Mountain Range, from An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January 1999

Birds

Scientific Name	Common name	*Scientific Name*	Common name
Accipiter gentilis	northern goshawk	*Eremophila alpestris*	horned lark
Accipiter striatus	sharp-shinned hawk	*Falco sparverius*	American kestrel
Bombycilla cedrorum	cedar waxwing	*Geothlypis trichas*	common yellowthroat
Bonasa umbellus	ruffed grouse	*Junco hyemalis*	dark-eyed junco
Canachites canadensis	spruce grouse	*Loxia curvirostra*	red crossbill
Carpodacus purpureus	purple finch	*Loxia leucoptera*	white-winged crossbill
Catharus fuscescens	veery	*Parus hudsonicus*	boreal chickadee
Catharus guttata	hermit thrush	*Perisoreus canadensis*	gray jay
Catharus ustulatus	Swainson's thrush	*Pheuticus ludovicianus*	rose-breasted grosbeak
Corvus corax	raven	*Picoides arcticus*	black-backed three-toed woodpecker
Cyanocitta cristata	blue jay		
Dendroica caerulescens	black-throated blue warbler	*Pinocola enucleator*	pine grosbeak
		Regulus calendula	ruby-crowned kinglet
Dendroica castanea	bay-breasted warbler	*Regulus setrapa*	golden-crowned kinglet
Dendroica coronata	yellow-rumped warbler	*Seiurus aurocapillus*	ovenbird
Dendroica fusca	blackburnian warbler	*Sitta canadensis*	red-breasted nuthatch
Dendroica magnolia	magnolia warbler	*Spinus pinus*	pine siskin
Dendroica palmarum	palm warbler	*Spizella passerina*	chipping sparrow
Dendroica pensylvanica	chestnut-sided warbler	*Troglodytes troglodytes*	winter wren
Dendroica striata	blackpoll warbler	*Turdus migratorius*	American robin
Dendrocia tigrina	Cape may warbler	*Vireo olivaceus*	red-eyed vireo
Dendrocia virens	black-throated green warbler	*Vireo solitarius*	solitary vireo
		Vermivora ruficapilla	Nashville warbler
Empidonax minimus	least flycatcher	*Wilsonia canadensis*	Canada warbler
		Zonotrichia albicollis	white-throated sparrow

Mammals

Scientific Name	Common name	*Scientific Name*	Common name
Alces alces	moose	*Lepus americanus*	showshoe hare
Blarina brevicuada	short-tailed shrew	*Martes pennanti*	fisher
Canis latrans	coyote	*Mustela erminea*	short-tailed weasel
Clethrionomys gapperi	boreal red-back vole	*Tamiasciurus hudsonicus*	red squirrel
Felis rufus	bobcat	*Ursus americanus*	black bear

Eddy Pond is classified by the Maine Land Use Regulation Commission (LURC) as a Management Class 6 Lake. According to the 1997 LURC Comprehensive Land Use Plan:

> Management Class 6 Lakes are "remote ponds" – inaccessible, undeveloped lakes with coldwater game fisheries. The Commission intends to continue to prohibit development within 1/2 mile of these ponds to protect the primitive recreational experience and coldwater lake fisheries in remote settings.

Both Eddy Pond and Moose and Deer Pond have high dissolved oxygen levels, and Eddy Pond has deep areas that provide refuge for salmonids in summer months. Moose and Deer Pond probably freezes to the bottom during some winters.

Saddleback Mountain's slopes also serve as the headwaters for numerous small streams, including Cascade Stream and Haley Brook to the northwest and Conant Stream and Winship Stream to the southeast. Saddleback Lake, a 336-acre water body, is located several miles to the west outside the study area.

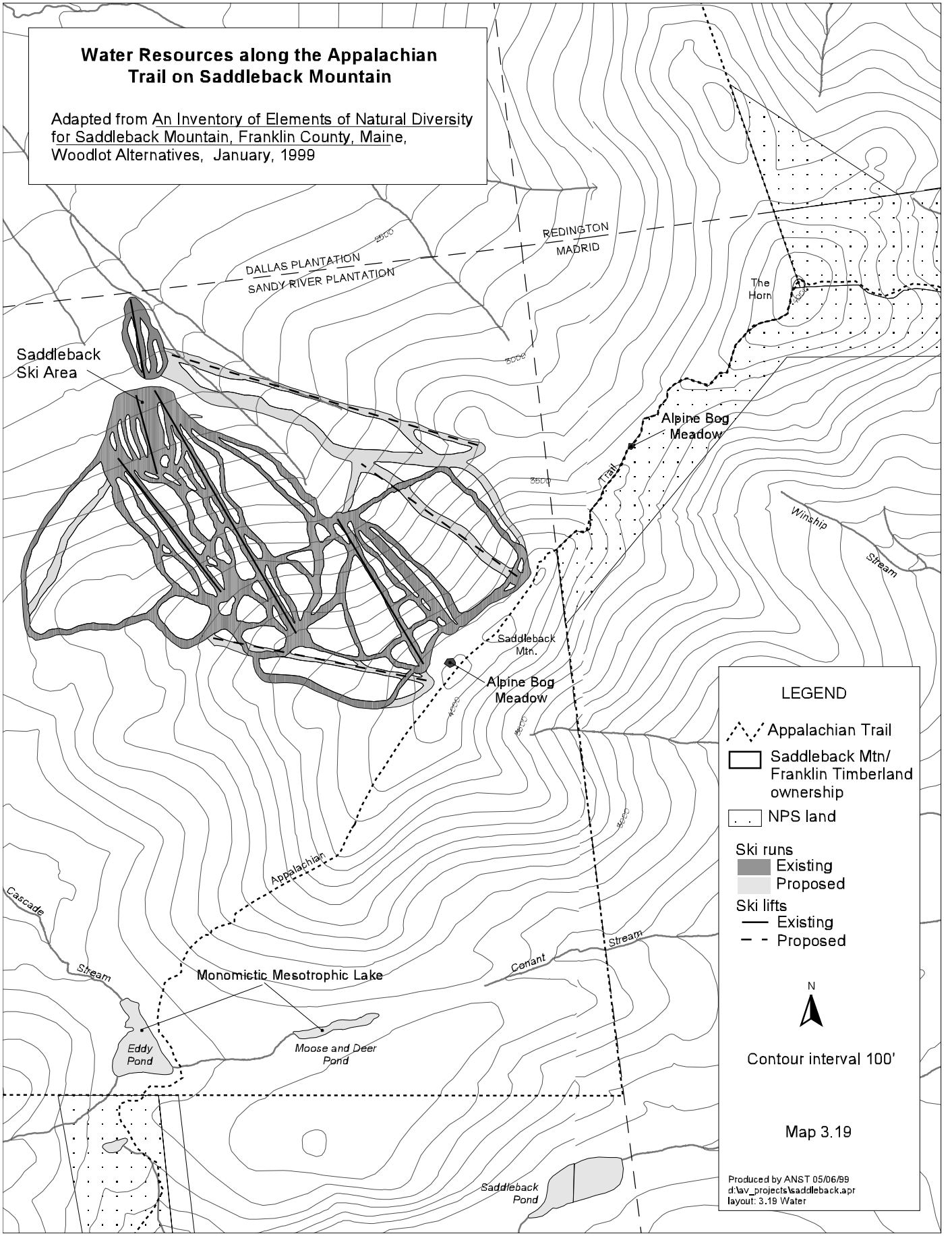
Cultural Resources

Paleoindians first inhabited Maine approximately 10,000 years ago, following the retreat of the last glacier. Abenaki Indian settlements in the region during early, middle, and late Woodland periods were concentrated at lower elevations near major rivers and lakes.

Four primary types of prehistoric archaeological sites are known to exist in Maine: (1) habitation and workshop sites; (2) lithic quarries; (3) cemeteries; and (4) rock art. No records of prehistoric sites within the study area currently exist in the Maine State Historic Preservation Office files. Records maintained by the Maine State Historic Preservation Office further indicate that the sensitivity of the area for archaeological resources is considered to be low.

No known historic structures exist within the study area today. A Maine Warden firetower, originally constructed in 1913 on the summit of Saddleback Mountain, was manned until the early 1970s. A watchman's cabin was built near the tower in 1951. The wooden cab was blown off of the firetower in 1954, and a later cab was destroyed in a fire that also weakened the steel structure. The last remaining vestiges of the tower and the adjacent watchman's cabin were removed in 1988.

Settlers arrived in Madrid in 1807 and in Rangeley in 1817. Logging became the dominant factor in the regional economy in the mid- to late- 1800s, and continues to be the primary land use in the area today. Saddleback's lower slopes were logged initially between the 1890s and the 1920s. Elaborate winches and pulleys were used to ease log sleds down the mountain. Between Mud Pond and Ethel Pond just south of Saddleback, the Appalachian Trail crosses over a series of ledges where grooves worn by the cables attached to the winches and pulleys are still evident.


Water Resources along the Appalachian Trail on Saddleback Mountain
Adapted from An Inventory of Elements of Natural Diversity for Saddleback Mountain, Franklin County, Maine, Woodlot Alternatives, January, 1999
REDINGTON
MADRID
DALLAS PLANTATION
SANDY RIVER PLANTATION
The Horn
Saddleback Ski Area
Alpine Bog Meadow
Trail
Winship
Stream
Saddleback Mtn.
Alpine Bog Meadow
Appalachian
Cascade
Stream
Monomictic Mesotrophic Lake
Eddy Pond
Moose and Deer Pond
Conant
Stream
Saddleback Pond
LEGEND
Appalachian Trail
Saddleback Mtn/ Franklin Timberland ownership
NPS land
Ski runs
Existing
Proposed
Ski lifts
Existing
Proposed
N
Contour interval 100'
Map 3.19
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Saddleback Mountain has long played an important role in the lives of outdoor enthusiasts from Maine and outside the state. Josiah Swift, farmer, naturalist, and publisher from Madrid, wrote of his "Ascent of Saddleback" in 1839. Almost a century later, Helon N. Taylor, a game warden from Eustis, Maine, planned the route of the Appalachian Trail over Saddleback. Volunteers marked and cleared much of the Appalachian Trail in Maine in 1933 and 1934. In 1935, crews from the CCC cut and blazed this Trail section over Saddleback Mountain under the direction of James Sewall, Forester for the Civilian Conservation Corps (CCC) in Maine. Two years later, the Civilian Conservation Corps constructed and blazed the last remaining section on nearby Sugarloaf Mountain, and the Appalachian Trail was officially completed from Georgia to Maine.

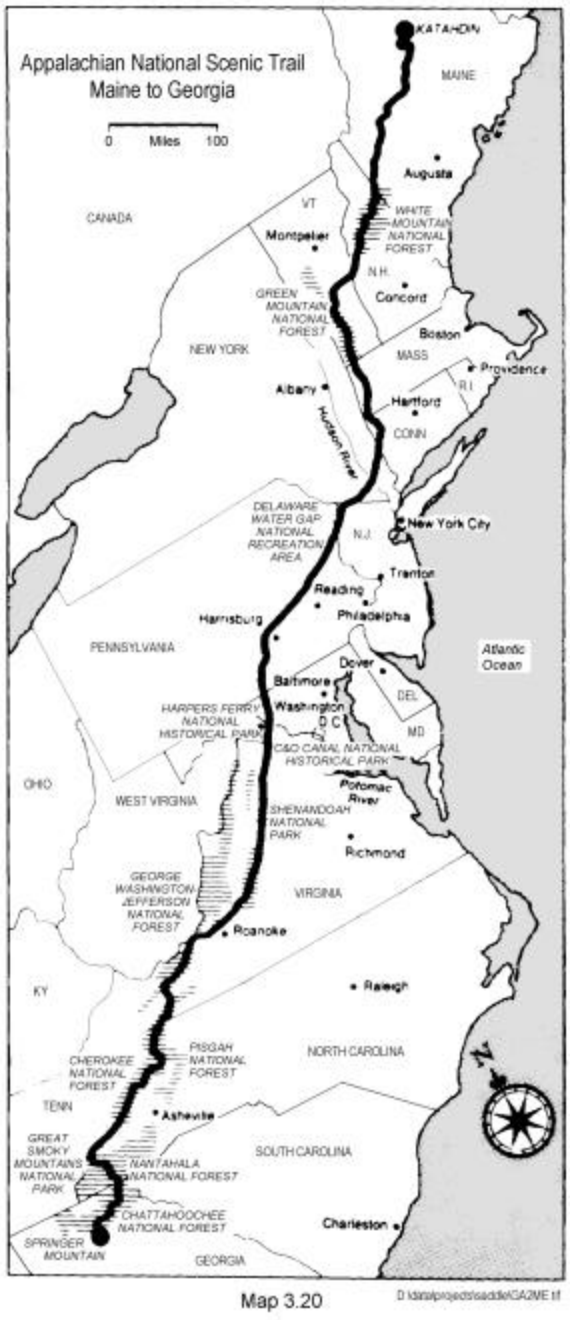
The Appalachian Trail has followed its present course along the crest of Saddleback Mountain for more than 60 years. Though the Appalachian Trail in Maine is not listed on nor has it been nominated for the National Register of Historic Places, the Maine State Historic Preservation Office has indicated that the Trail should be evaluated for nomination to the National Register because of its significance in the early movements for providing outdoor recreation and preservation of the natural environment. Evaluating the Appalachian Trail for possible National Register listing will require a separate study beyond the scope of this analysis.

Recreation

One of the primary reasons that this document is being prepared is to analyze the interactions and potential conflicts between two important recreational uses of Saddleback Mountain: the Appalachian National Scenic Trail and Saddleback Ski Area. These two recreational resources provide opportunities for hikers and alpine skiers, respectively. In addition, the Rangeley region appeals to a variety of other recreationists, including anglers, hunters, bicyclists, sightseers, boaters, and snowmobilers.

The Appalachian National Scenic Trail: The Appalachian Trail, conceived of in 1921 and constructed primarily by volunteers in the 1920s and 1930s, was established as a national scenic trail in 1968 under the National Trails System Act (P.L. 90-543, as amended, 16 U.S.C. 1241 et seq.). According to the Act, the Appalachian National Scenic Trail is "to be a trail of approximately two thousand miles extending generally along the Appalachian Mountains from Mount Katahdin, Maine, to Springer Mountain, Georgia, that is administered primarily as a footpath…to be so located as to provide for maximum outdoor recreation potential…and to provide for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which it passes."

The Appalachian Trail is a continuous, marked footpath that traverses the Appalachian Mountain chain from central Maine to northern Georgia, for a distance of 2,160 miles. The footpath and its associated protective corridor form a greenway extending along much of the eastern seaboard. The Trail connects more than 75 public land areas in



Map 3.20 The Appalachian National Scenic Trail, Maine to Georgia

14 states, including six other units of the National Park System, eight national forests, and more than 60 state park, forest, and game-management units. Almost every mile of the Trail is within a few hours' drive of a major population center, and some portion of the Trail is within a day's drive of two-thirds of the population of the United States. (See Map 3.20.)

As the longest unit of the National Park System, the Appalachian Trail is a recreational resource that provides its visitors with countless opportunities to enjoy the wild, scenic, and pastoral settings of the Appalachian Mountains. Millions of visitors annually enjoy some portion of the Trail, ranging from leisurely strolls to weekend outings and extended backpacking excursions, making the Appalachian Trail among the most heavily visited units of the National Park System. The Trail also affords opportunities for continuous long-distance hiking that are world-famous.

Though the Appalachian Trail crosses numerous mountain peaks between Maine and Georgia, few of these mountains extend above timberline. Saddleback, Katahdin, and the Bigelows in Maine, the Presidential Range in New Hampshire, the Mount Rogers National Recreation Area in southwest Virginia, and the Roan Highlands in Tennessee and North Carolina represent for many the essence of the Appalachian Trail: dramatic 360° views of the surrounding landscape, subalpine and alpine, tundra-like vegetation, the evidence of geologic and climatologic extremes, and a marked sense of the predominance and scenic grandeur of the natural world.

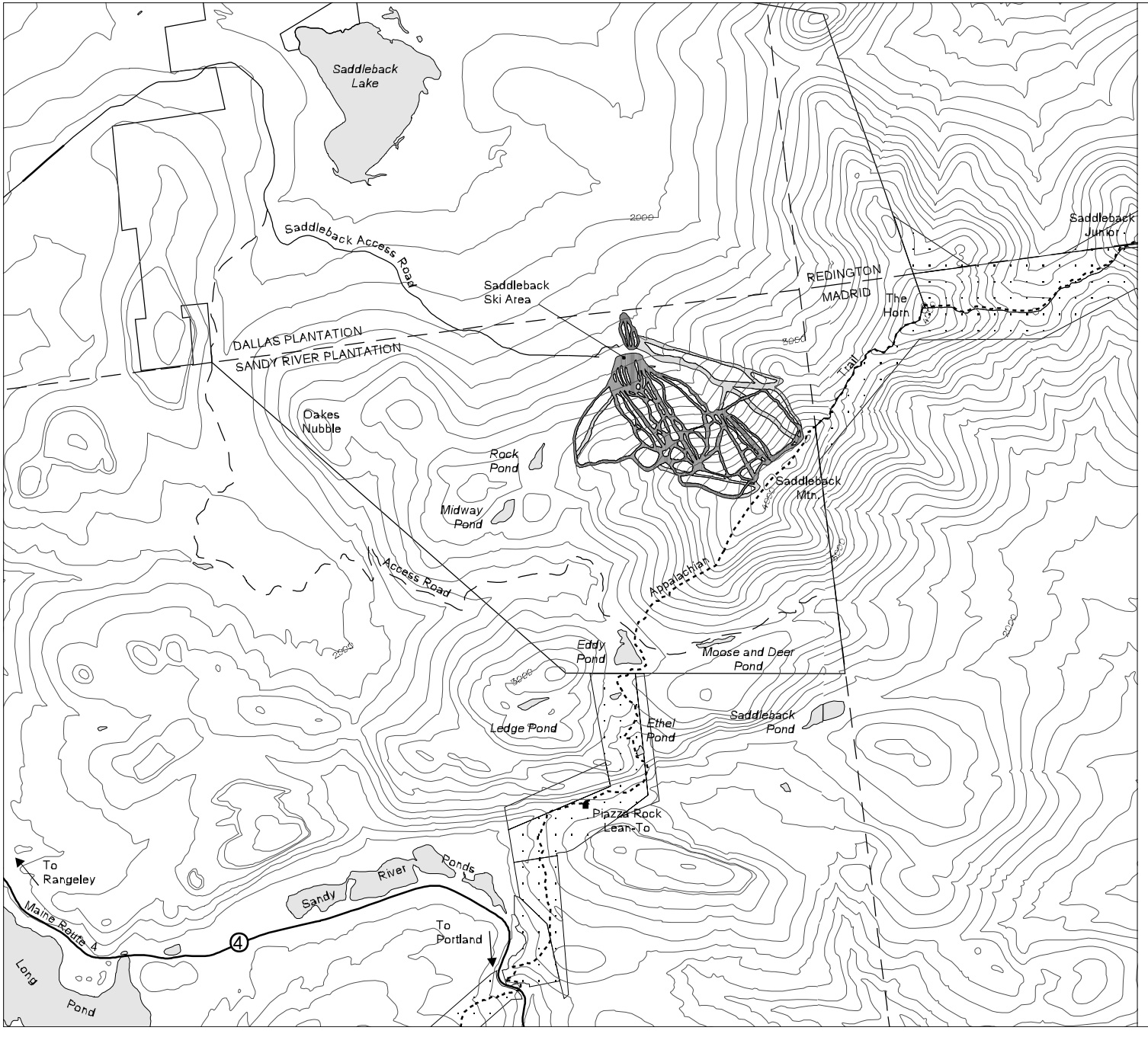
The Appalachian Trail in Maine: The Appalachian Trail extends through Maine for 281 miles, from the Trail's northern terminus on Katahdin in Baxter State Park to the Mahoosuc Range on the New Hampshire border. Crossing many of the state's highest peaks, the Trail also winds through vast, unpopulated woodlands, with few roads, towns, or other amenities of civilization. It is protected by a corridor of public land that is a minimum of 1,000 feet in width, though in a number of areas it is located within a wider block or corridor of public lands where necessary to protect exemplary natural or scenic areas, such as high-elevation summits or great ponds.

The Appalachian Trail crosses the summit of nine of the state's highest peaks – Old Speck, Saddleback and The Horn, Spaulding, North and South Crocker, West and Avery Peaks in the Bigelows, and Baxter Peak on Katahdin. Two other 4,000-foot peaks in western Maine –Mt. Abraham and Sugarloaf – can be reached by short side trails from the Trail. With the exception of Baxter Peak, all of these high-elevation mountains are located in the western portion of the state. Many of these ascents begin at elevations below 2,000 feet, making the Appalachian Trail in Maine one of the most rugged and challenging sections of the entire Trail.

Western Maine is relatively removed from major population centers. As a result, the Appalachian Trail in western Maine also provides opportunities for solitude not found on many sections of the Trail. Trail-use statistics for Saddleback Mountain are not available; however, in 1996, more than 3,000 hikers stopped at the Piazza Rock Lean-To, which is situated two miles west of the southwestern shoulder of Saddleback Mountain. (See Map 3.21.) A study of users along the Trail is presently underway that will provide more precise data regarding use levels on specific sections of the Trail.

The general consensus among Trail managers is that use of the Appalachian Trail is increasing steadily. One clear indicator of this trend is the increasing number of thru-hikers (those who hike the entire Trail from end to end in one year). According to the Appalachian Trail Conference, the number of thru-hikers has increased steadily since the 1960s, and more than doubled since 1991. In 1997, 403 hikers registered their completed hikes with the conference. Thru-hikers represent only a fraction of the total use on any section, however. The vast majority of users are day or weekend hikers or backpackers covering a shorter section of the Appalachian Trail.

The Recreational Experience Provided by the Appalachian National Scenic Trail: The Appalachian Trail is described in the *Comprehensive Plan for Protection, Management, Development and Use of the Appalachian National Scenic Trail* as "a way, continuous from Katahdin in Maine to Springer Mountain in Georgia, for travel on foot through the wild, scenic, wooded, pastoral, and culturally significant lands of the Appalachian Mountains." The Appalachian Trail Conference has defined the recreational environment, or the "Trail experience," as "the sum of opportunities that are available for those walking on the Trail to interact with the wild, scenic, pastoral, cultural, and natural elements of the environment of the Appalachian Trail, unfettered and unimpeded by



Existing Recreational Resources:

The Appalachian National Scenic Trail and Saddleback Ski Area

LEGEND

Appalachian Trail

NPS Land

Saddleback Ski Area
Ski runs
Existing
Proposed

N

Contour interval = 100'

0 2500 5000 Feet

Map 3.21

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d:\av_projects\saddleback.apr
layout: 3.21 Existing rec. resources

competing sights and sounds and in as direct and intimate a manner as possible." Integral to this "Trail experience" are:

- a sense of remoteness and detachment from civilization;
- opportunities to experience solitude, freedom, personal accomplishment, self-reliance, and self-discovery;
- a sense of being on the height of land;
- opportunities to experience the cultural, historical, and pastoral elements of the surrounding countryside;
- a feeling of being part of the natural environment; and
- opportunities for travel on foot, including long-distance hiking.

With the exception of the pastoral component, the existing Trail experience on the Appalachian National Scenic Trail across Saddleback Mountain (which is described in detail in Chapter 2) provides all of the experiential opportunities listed above. Saddleback Mountain is clearly considered to be one of the highlights or "jewels" of the entire Appalachian Trail, providing hikers with outstanding opportunities for observation, enjoyment, and exploration of the natural world, a sense of remoteness and detachment from civilization, a sense of being on the height of land, and a feeling of being subordinate to the natural environment. The challenging hike to reach the summit of Saddleback Mountain and The Horn, the mountain's dramatic scenery, historical use, and ecological significance all epitomize the Congressional mandate as defined in the National Trails System Act: "to provide for the conservation and enjoyment of nationally significant scenic, natural, and historic areas."

Photo 3.22 Hikers on the Appalachian Trail across Saddleback Mountain

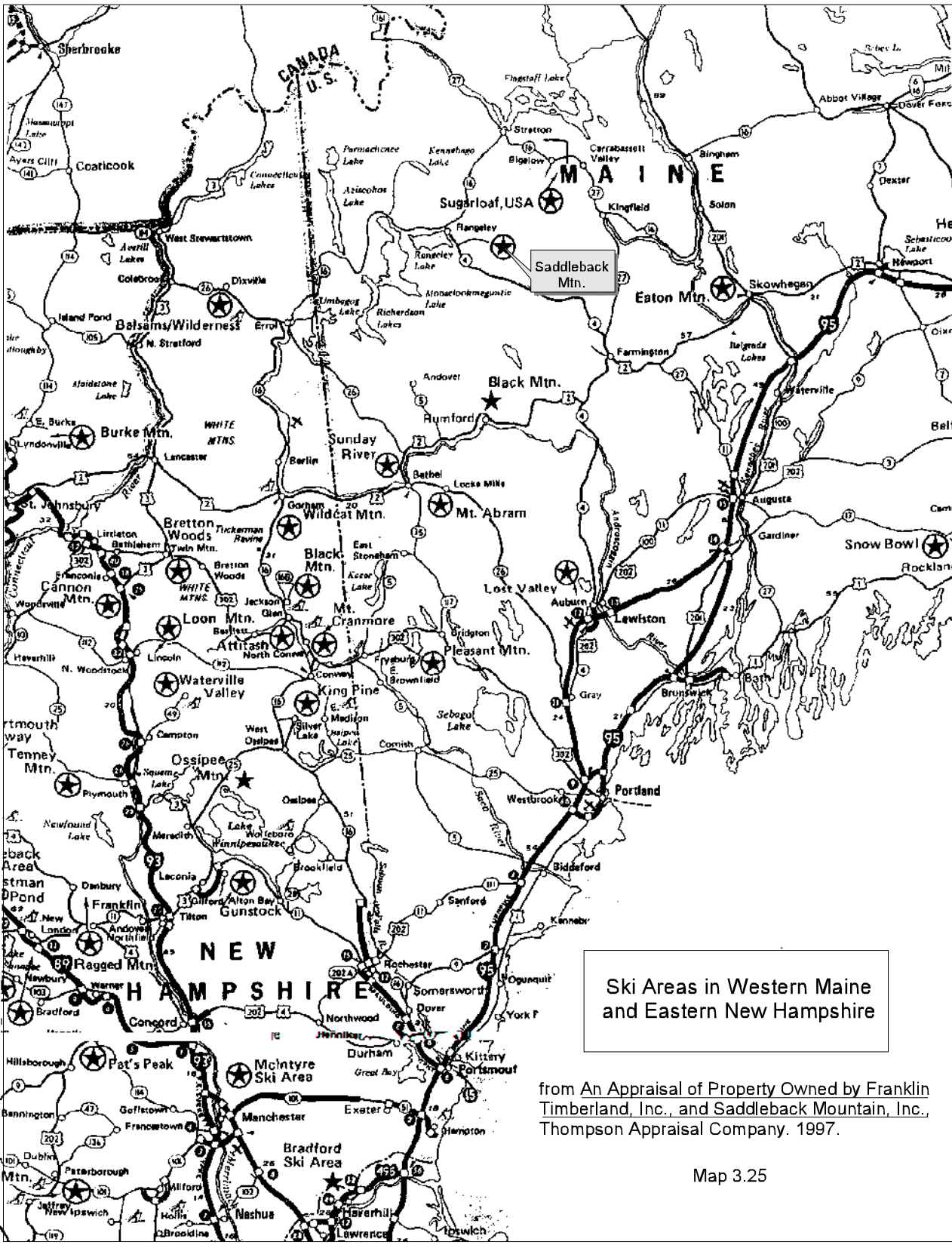
Saddleback Ski Area: Saddleback Ski Area presently consists of 41 trails and five ski lifts (three chair lifts and two T-bars), with approximately 96.5 acres of skiable terrain and an advertised vertical drop of 1,830 feet. (See Map 3.21.) Table 3.23 compares Saddleback Ski Area's existing physical characteristics and recreational opportunities to those provided by other ski areas in Maine and eastern New Hampshire.

Table 3.23 Saddleback Ski Area and comparable ski areas in western Maine and eastern New Hampshire, from An Appraisal of Property owned by Franklin Timberland, Inc., and Saddleback Mountain, Inc., Thompson Appraisal Company, 1997

Ski Area	Skier-Visits Ranking	Skiable Terrain	Snow-making coverage	Vertical Drop	Base Elevation	Lift Capacity Per Hour (000)	1997 Ticket Price
Saddleback	7	41 trails, 96 acres	55%	1,830 ft.	2,290 ft.	3,790	$33
Sugarloaf	2	283 acres	90%	2,837 ft.	1,400 ft.	17,000+	$47
Sunday River	1	457 acres	90%	2,011 ft.	782 ft.	30,000+	$48
Shawnee	6	31 trails	100%	1,300 ft.	600 ft.	5,600	$35
Attitash, NH	3	280 acres	98%	1,750 ft.	550 ft.	12,026+	$44
Wildcat, NH	4	20 trails	100%	2,100 ft.	2,000 ft.	8,500	$39
Cranmore	5	190 acres	100%	1,200 ft.	500 ft	not avail.	$39

Saddleback Ski Area provides skiers with a big mountain with a substantial vertical drop, as well as the attractions of four-season recreation opportunities in the vast natural beauty of the surrounding Rangeley Lakes region. The mountain has a high base elevation, which gives it a competitive advantage during winters with poor snowfall. It is within 200 miles of several of New England's and Canada's major population centers. Lastly, Saddleback provides an uncrowded, less developed atmosphere.

Photo 3.24 Saddleback Ski Area



from An Appraisal of Property Owned by Franklin Timberland, Inc., and Saddleback Mountain, Inc., Thompson Appraisal Company. 1997.

Map 3.25

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layout: 3.25 Ski NE

Like Sugarloaf, Saddleback Ski Area is the most distant of the major ski area destinations in the Northeast and is less accessible from the Boston/Portland market than Sunday River. These western Maine areas also compete with the ski areas of New Hampshire and Vermont for the Boston market. (See Map 3.25.)

The orientation of the existing Saddleback Ski Area is generally north and northwest, minimizing snowmelt and the thaw/freeze cycle evident on south-facing slopes. Most of the existing ski area's trails run true to the fall-line, which allows for a better over-all skiing experience as well as more efficient trail construction, maintenance, and grooming. Some of the ski trails also involve catwalks, side-hills and fall-aways.

Four of the five lifts serving Saddleback Ski Area are more than 30 years old. Due to age, all five of the lifts have extremely low hourly capacities (Sno.engineering, Inc. 1998). Table 3.26 describes the existing lift facilities at Saddleback Ski Area.

Table 3.26 Capacity of existing ski lifts at Saddleback Ski Area, from the Saddleback Ski Area Conceptual Development Plan, Franklin County, Maine, Sno.engineering, Inc., December 1998

Map Ref.	Name	Type	Length (ft.)	Verti-cal (ft.)	Average Grade (%)	Capacity (persons/ hour)*	VTF*/ Hour (000)	Util. Rate	CCC** (guests)	Year In-stalled
A	The Buggy	T-Bar	1,285	164	13%	848	139	85%	200	1960
B	The Surrey	Double Chair	1,397	228	16%	848	193	85%	200	1967
C	Stage coach	Double Chair	4,540	1,130	25%	638	721	90%	300	1963
D	Pony Express	T-Bar	2,380	647	27%	830	537	90%	400	1960
E	Wells Fargo	T-Bar	2,622	974	37%	626	610	95%	200	1980
Total	**3 T-bars, 2 chairlifts**		**12,224**	**3,143**		**3,790***	**2,200***		**1,300****	

*Capacity in persons per hour and vertical transportation feet (VTF) are measurements of uphill lift capacity.
**Comfortable carrying capacity (CCC) is typically used as a measurement of total ski area capacity (both uphill and downhill capacity), and is generally considered to be a more reliable measurement of a ski area's capacity than acreage.

According to Sno.engineering, the trail network at Saddleback Ski Area for the most part uses the terrain and the fall line in an efficient manner, thus providing a pleasant ski experience. A great majority of the trails at Saddleback are characterized by comparatively narrow widths, which reflects the time period in which they were designed (and, to some degree, the necessity of protecting the skiers and snow cover on the trails from prevailing westerly winds).

Table 3.27 below, prepared by Sno.engineering, Inc., compares the skill level distributions for ski trails at the existing Saddleback Ski Area with the ideal skill level distributions for a typical ski area in the Northeast region. According to Sno.engineering, this distribution of ski area terrain compares favorably to industry standards, though

beginner terrain is lacking. Sno.engineering estimated that the current daily mountain capacity of Saddleback Ski Area is approximately 1,300 skiers per day.

Table 3.27 Saddleback Ski Area, classification breakdown by "comfortable carrying capacity" and acreage, from the Saddleback Ski Area Conceptual Development Plan, Franklin County, Maine, Sno.engineering, Inc., December 1998

Ability Level	Number of Trails	CCC**	Acreage	CCC** Percent	Acreage Percent	Ideal
Beginner	0	0	0.0	0%	0%	5%
Novice	6	350	18.4	27%	19%	12%
Low Intermediate	6	180	12.4	14%	13%	18%
Intermediate	15	550	40.7	42%	42%	35%
Advanced	6	140	15.4	11%	16%	20%
Expert	7	80	9.6	6%	10%	10%
Totals:	41*	1,300**	96.5	100%	100%	100%

*One of the ski trails at Saddleback provides access to condominiums and parking. This trail is included in the total but is not assigned to an ability level category.
**Comfortable carrying capacity (CCC) is a measurement of total ski area capacity (both uphill and downhill capacity).

Current skier-visit and revenue figures for Saddleback Ski Area are not available. However, based on relatively recent historical data, including regional trends in visitation and economic averages published by the National Ski Areas Association, Sno.engineering, Inc. estimates that Saddleback hosts approximately 30,000 to 35,000 skier visits annually, generating roughly $1 million in annual gross revenue for the ski area. Based on a 125-day ski season, this level of visitation breaks down to an average of 240 to 280 skier visits per day, although weekends are typically busier than midweek days at this type of ski area.

In 1989 and 1994, Saddleback Ski Area received conditional approval from the Maine Land Use Regulation Commission (LURC) as part of its planned development subdistrict rezoning for the construction of four additional ski lifts and six additional ski trails, which would effectively double the ski area's capacity to 2,600 skiers per day. LURC's 1994 amendment permitted Saddleback Ski Area to submit final plans for individual projects within the planned development subdistrict. The conditions imposed by LURC as part of the preliminary approval were retained in the amendment. At present, however, Saddleback Ski Area has not begun construction of any new ski area facilities or submitted further information to respond to the conditions imposed by LURC as part of its approval.

Representatives of Saddleback Ski Area also have stated that, although they have no specific plans at this time, at some point in the future they want to expand the ski area

further into the bowl area north of the existing ski area and onto the southeast side of the mountain.

Ski Industry Projections, Regionally and Nationally: Visits to ski areas nationwide have remained relatively flat over the past two decades, ranging from 50.6 million in 1983/84 to 54.1 million in 1997/98, with a peak season of 54.6 million in 1993/94. (These numbers include all visitors who purchase lift tickets, including snowboarders and telemark skiers.) The ski industry acknowledges a flat participation level in visitation to ski areas, which can be attributed to a number of factors: a maturing of the industry, demographic and lifestyle shifts, the prohibitive cost of entry into the sport, and competition from other sports and leisure activities.

Additionally, the number of ski areas has shrunk from 800 in 1979, to 700 in 1986, to approximately 520 in 1996. While some areas have been absorbed by other, more successful areas and are actually still operating, most have been closed and ceased to operate altogether.

During the 1960s, the popularity of skiing in the United States was astonishing, with an annual growth rate of 16 percent in skier visit totals between 1960 and 1970. Growth slowed during the 1970s, but skier visit totals continued to increase by 10 percent annually. Since 1980, the mountain resort industry has been relatively stable from a skier-visit perspective, with a record winter season in 1993/94 when skier visitation totaled 54.6 million.

Table 3.28 below compares skier visits in the United States and the Northeast region during the past 15 seasons. (The Northeast region includes Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, and New York.) The table also shows year-to-year percentage change and the Northeast as a percentage of the U.S. market for each year.

Table 3.28 United States and Northeast Region skier-visits, 1983/84 – 1991/98

	Skier-Visits in 000,000s														
	1983/84	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*
U.S.	50.6	51.4	51.9	53.7	53.9	53.3	50.0	46.7	50.8	54.0	54.6	52.7	54.0	52.5	54.1
% Change		1%	1%	4%	0%	-1%	-6%	-7%	9%	6%	1%	-4%	2%	-3%	3%
Northeast	12.1	11.1	12.8	14.7	14.4	12.7	13.3	11.2	12.3	13.2	13.7	11.3	13.8	12.4	12.7
% Change		-8%	16%	15%	-2%	-12%	4%	-16%	10%	8%	4%	-18%	23%	-10%	2%
% of U.S. Market	24%	22%	25%	27%	27%	24%	27%	24%	24%	24%	25%	21%	26%	24%	23%

U.S. skier-visits have typically ranged between 50 and 54 million during the past few decades, with year-to-year ups and downs as substantial as nine percent. While weather patterns were unpredictable and atypical, U.S. skier visit totals (54.1 million total visits)

for the 1997/98 season were the second highest total on record (National Ski Area Association, Kottke National End of Season Survey, 1997/98).

Northeast skier-visits have varied annually in a broader percentage range, with total visits as low as 11.1 million and as high as 14.7 million since 1983/84. The high point was reached more than a decade ago, in 1987, when skier-visits exceeded the total of the most recent season by two million. The Northeast's share of the national market has been as high as 27 percent and as low as 21 percent during the period shown in the table.

Visitation Trends in Maine and at Saddleback Ski Area: Skier visits to Maine areas increased from 565,000 in 1985 to 1.26 million in 1996-97, primarily as a result of the development of Sunday River Ski Area in Newry near Bethel and expansion of Sugarloaf Ski Area in Carrabasset Valley. Sunday River and Sugarloaf, now under the same ownership, currently capture more than half of the total skier visits to Maine ski areas. Saddleback, Shawnee, Black Mountain, Mt. Abram, and Lost Valley capture the remainder of the regional market within the state. Saddleback's share of the Maine skier market currently is estimated to be approximately 2.8 percent, based on the Sno.engineering skier-visit estimate mentioned previously. A few smaller ski areas also exist that cater to local communities.

Table 3.29 compares skier-visits for the Northeast and Maine and shows year-to-year percentage changes in visitation as well as skier-visits in Maine as a percentage of the Northeast market.

Table 3.29 Northeast Region and Maine skier-visits, 1983/84 – 1997/98

	Skier-Visits in 000,000s														
	1983/84	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*
Northeast	12.1	11.1	12.8	14.7	14.4	12.7	13.3	11.2	12.3	13.2	13.7	11.3	13.8	12.4	12.7
% Change		-8%	16%	15%	-2%	-12%	4%	-16%	10%	8%	4%	-18%	23%	-10%	2%
Maine	0.4	0.5	0.6	0.9	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.3	1.3	1.4
% Change		9%	22%	64%	12%	5%	6%	-4%	10%	4%	3%	-6%	11%	-1%	7%
% of Northeast Market	4%	4%	4%	6%	7%	8%	9%	10%	10%	9%	9%	11%	10%	11%	11%

Maine skier visits increased by 231 percent between the 1983/84 and 1997/98 ski seasons. While the most dramatic gains occurred during the late 1980s, statewide skier visits have continued to increase at a relatively strong pace during recent years. Over-all, Maine's share of the Northeast market has increased from four percent in 1983/84 to 11 percent in 1997/98.

Maine's market share increases have not been shared among all of the state's ski areas. Sunday River and Sugarloaf, the state's two largest facilities, have experienced dramatic increases during this period while skier visits at the state's smaller facilities have

remained relatively stable. This reflects market trends throughout the U.S., where the larger ski facilities have attracted a greater share of the market. This trend is reflected in Table 3.30 below, which compares Maine and Saddleback Ski Area skier-visits from 1984/85 through 1995/96. (Data for 1996/97 and 1997/98 are not available for Saddleback Ski Area.) Again, year-to-year percentage increases and decreases in visitation and skier visits to Saddleback Ski Area as a percentage of the statewide market are shown.

Table 3.30 Maine and Saddleback Ski Area skier-visits, 1984/85– 1995/96

	Skier Visits in 000s											
	1984/85	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Maine	465.0	565.0	924.0	1,031.0	1,080.0	1,144.0	1,093.0	1,200.0	1,243.0	1,275.0	1,200.0	1,327.9
% Change		22%	64%	12%	5%	6%	-4%	10%	4%	3%	-6%	11%
Saddleback	37.5	31.8	43.6	42.8	40.4	33.4	30.8	32.4	36.3	37.3	29.6	32.8
% Change		-15%	37%	-2%	-6%	-17%	-8%	5%	12%	3%	-21%	11%
% of Maine Market	8.1%	5.6%	4.7%	4.2%	3.7%	2.9%	2.8%	2.7%	2.9%	2.9%	2.5%	2.5%

After surpassing 40,000 skier visits for three consecutive years during the late 1980s, Saddleback Ski Area's skier visits have fallen to the low 30,000s level in recent years. Additionally, Saddleback Ski Area's share of the statewide market has fallen from 8.1 to 2.5 percent.

According to Sno.engineering's study, Saddleback Ski Area's market performance in recent years appears to be a response to several factors:

- *Location and Access* – Saddleback Ski Area's location near Rangeley is regarded as remote by many skiers. There is no convenient commercial airline access and driving times from major northeastern metropolitan areas are longer than those for most mountain resorts in the northeast. Sugarloaf is most comparable in terms of location and access.

- *Age of Facilities* – Today's downhill skier expects modern lifts, trail grooming, snowmaking and base facilities. Saddleback Ski Area's ski facilities are old compared to the competition.

- *Lack of Bed Base and Resort Facilities* – Saddleback Ski Area's on-mountain bed base is far too small for a destination-oriented mountain resort. Furthermore, anecdotal reports indicate that the available transient bed base in the Rangeley area is typically occupied by snowmobilers during the winter months.

- *Lack of Change* – Experience in the ski industry indicates that there are several keys to success, particularly with respect to gaining market share and increasing skier-visits. Resorts that have shown consistent management and willingness to

invest in their facilities have increased market share, often at the expense of other, nearby ski areas.

Other Recreational Opportunities in the Rangeley Lakes Region: The Rangeley Lakes Region has traditionally served as one of the gateway communities for the North Woods, and hunting, fishing, sight-seeing, and boating have long been popular regional attractions. The Rangeley region boasts 111 lakes, which provide nearly unlimited opportunities for water-based recreation. Hunting and fishing camps, though not as prevalent as in years past, still serve a committed clientele.

During the past several decades, Rangeley has developed into a destination area for a variety of recreational users, including snowmobilers, mountain bikers, and cross-country skiers. A 150-mile network of clearly marked, well-groomed snowmobile trails interconnects with other systems that lead throughout Maine and into Canada. One of the routes of this snowmobile trail system, known as the Interconnecting Trail System (ITS), crosses the southerly portion of the area near Eddy Pond. Use of this snowmobile route (ITS 84/89) would continue under all alternatives. A season-long calendar of races, festivals, and other special events attracts snowmobile enthusiasts from near and far. The area also maintains approximately 47 miles of cross-country ski trails.

Social and Economic Environment

The 1997 LURC Comprehensive Land Use Plan contains the following description of the Rangeley Lakes area:

> The multi-recreational resort nature of the region, which includes the Rangeley Lakes and Saddleback Mountain Ski Area, has made it particularly attractive to residential and recreational development. It has been the jurisdiction's most rapidly growing area. The area has an abundance of high-value natural resources: numerous large lakes – some relatively undeveloped – and panoramic views from encircling hills and ridges, which are also traversed by the Appalachian Trail. Yet the area is accessible by several state roads and is within 20 miles of a number of employment centers, including Rumford, Mexico, Farmington, and Bethel.
>
> Rangeley, Dallas, and Sandy River plantations have been the focus of the most intensive development permit activity in the jurisdiction. Between 1971 and 1991, a total of 565 permits were issued in these three plantations. Census data shows an increase of 472 residential dwelling units between 1970 and 1990, indicating that, as of 1990, almost 100 pending building permits had not yet been exercised in these three communities.
>
> The plantations and townships of the Rangeley Lakes are part of the jurisdiction's Western Mountain region (Oxford and Franklin Counties), which grew in population by 14% from 1980-1990 and 47% from 1970-1990. The region's share of the total number of seasonal homes in the jurisdiction increased from 14% to 17% during the 1980s, and is expected to increase further.

-- page 110, LURC Comprehensive Land Use Plan

Despite these attractions and population growth, the economy of the Rangeley region has lagged behind much of the rest of the state and the nation. Franklin County lies in a region known for its large areas of undeveloped forest land, and much of its economic health has been tied in the past to the timber industry.

The town of Rangeley is the largest community in the Rangeley Lakes region and is relatively close to the Saddleback Ski Area. Rangeley provides the majority of services, including retail stores, restaurants, lodging, services, and entertainment. In 1996, Rangeley had a population of 975, as compared to the county's total population of just under 29,000.

Although large in area, Franklin County's population and contribution to the state's economy are relatively small. Franklin County's population growth and per capita income have lagged behind the state averages in recent years, while unemployment and poverty rates have been higher. Employment and earnings have made some gains, but other indicators point to an area that has a somewhat depressed economy.

Population: From 1990 to 1996, the population of Franklin County declined by slightly less than 1%, while that of the state of Maine increased by less than one percent (see Table 3.31). These rates of growth are in contrast with the nation's positive growth rate of 6.3%.

Table 3.31 Population and rate of change, Franklin County, Maine

Area	1990	1996	% Change 1990 to 1996
Franklin County	29,123	28,871	-0.87%
Maine	1,231,252	1,238,566	0.59%
USA	249,439,545	265,179,408	6.31%

Source: Regional Economic Information System, Bureau of Economic Analysis

Table 3.32 lists the populations of the communities comprising the area surrounding Saddleback Ski Area, and population trends from 1990 through 1996. No data were available for Redington Township. The local area population decreased by 6 percent over the first six years of this decade.

Table 3.32 Population and rate of change, town level

Town	1990	1996	% Change 1990 to 1996
Rangeley	1063	975	-8.5%
Madrid	178	165	-7.3%
Dallas Plantation	161	169	5.0%
Sandy River Pla.	64	67	4.7%
Total	1466	1376	-6.1%

Source: ME State Planning Office

Despite the decline in population, the local housing supply increased by 4 percent from 1990 through 1996, as illustrated in Table 3.33. This can be explained in part by the area's attraction as a recreation vacation destination.

Table 3.33 Housing units and rate of change, town level

Town	1990	1996	% Change 1990 to 1996
Rangeley	1349	1388	2.9%
Madrid	195	199	2.1%
Dallas Plantation	278	314	12.9%
Sandy River Pla.	241	248	2.9%
Total	2063	2149	4.2%

Source: ME State Planning Office

Income: Franklin County residents had a total personal income (TPI) of $518,581,000 in 1996. The county ranked 15th out of 16 counties in the state and accounted for only two percent of the state's TPI. Over the last ten years, the county's TPI grew at an annual average rate of 5.5%. This rate of growth was in line with the state rate of growth of 5.3% and the national rate of 5.9%.

In 1996, the per capita personal income (PCPI) in Franklin County was $17,962 (see Table 3.34). This placed Franklin County 10th out of 16 counties in the state of Maine. The county lagged behind the state and nation in per capita personal income. Franklin County's per capita personal income was only 85% of the state average of $21,087, and 74% of the national average of $24,463.

Table 3.34 Per capita income and rate of change, Franklin County, Maine

Area	1990	1996	% Change 1990 to 1996
Franklin County	$14,681	$17,962	22.4%
Maine	$17,190	$21,087	22.7%
USA	$19,188	$24,436	27.4%

Source: Regional Economic Information System, Bureau of Economic Analysis

The average annual growth rate of the county's per capita personal income over the last ten years was 5.0%, which compares favorably with the state average of 4.7% and the national average of 4.9%. The total percentage change in PCPI from 1990 to 1996 for both Franklin County and Maine was lower than that for the nation.

Table 3.35 Employment by industry, Franklin County, Maine

Industry	Number of Jobs, 1990	Percent of 1990 Total	Number of Jobs, 1996	Percent of 1996 Total
Farm	351	2.2%	345	2.1%
Agricultural Services, Forestry, Fishing, and other	142	0.9%	164	1.0%
Mining	13	0.1%	*	–
Construction	909	5.6%	1,220	7.3%
Manufacturing	5,190	31.9%	4,724	28.2%
Transportation and Public Utilities	390	2.4%	410	2.4%
Wholesale Trade	181	1.1%	183	1.1%
Retail Trade	2,878	17.7%	3,102	18.5%
Finance, Insurance, and Real Estate	770	4.7%	843	5.0%
Services	3,583	22.0%	3,825	22.8%
Government - Federal Civilian	103	0.6%	96	0.6%
Government - Military	180	1.1%	151	0.9%
Government State	480	2.9%	488	2.9%
Government - Local	1,121	6.9%	1,206	7.2%
Total	16,291	100%	16,763	100%

* Less than ten jobs. Estimates included in totals.
Source: Regional Economic Information System, Bureau of Economic Analysis

Employment and Earnings: Table 3.35 shows the breakdown of employment by industry for Franklin County in the years 1990 and 1996. In 1996, a total of 16,763 full- and part-time jobs were located within the county. Manufacturing (28.2% of the total), services (22.8%), and retail trade (18.5%) accounted for the most jobs within the county in 1996. These three sectors also accounted for the most jobs in 1990. Ski area employment is not segregated from the overall employment statistics for the service industry. Losses of positions in manufacturing were more than offset by gains in construction, retail trade,

services, and local government, for a net gain of 2.9%, or 472 jobs. In terms of employment, the structure of the county economy has remained relatively stable.

In 1990, Rangeley had 466 employed persons. Retail trade (26.0% of the total), services (21.1%), and construction (19.3%) provided the most jobs.

Manufacturing, services, and retail trade were the three largest sectors of the Franklin County economy in 1990 (see Table 3.36). Although the amount of earnings in manufacturing has declined slightly, this sector of the county economy maintained its relative position as the most important component of the local economy. In terms of 1996 earnings, the largest industries were manufacturing, which made up more than 39% of the total earnings, services at 17.7%, and retail trade at 11.3%.

Table 3.36 Earnings by industry, Franklin County, Maine, 1996

Industry	1990 Earnings (Thousands of Dollars)	1990 Percent of Total	1996 Earnings (Thousands of Dollars)	1996 Percent of Total
Farm	$2,620	0.8%	$1,560	0.4%
Agricultural Services, Forestry, Fishing, and other	$2,398	0.8%	$2,082	0.6%
Mining	$138	>0.1%	$95	>0.1%
Construction	$17,660	5.7%	$28,126	8.0%
Manufacturing	$138,330	44.7%	$136,970	39.1%
Transportation and Public Utilities	$10,055	3.2%	$13,877	4.0%
Wholesale Trade	$4,296	1.4%	$4,907	1.4%
Retail Trade	$32,030	10.3%	$39,398	11.3%
Finance, Insurance, and Real Estate	$10,768	3.5%	$14,203	4.1%
Services	$51,834	16.7%	$62,158	17.7%
Government - Federal Civilian	$2,936	0.9%	$3,334	1.0%
Government - Military	$1,078	0.3%	$1,202	0.3%
Government State	$12,018	3.9%	$13,260	3.8%
Government - Local	$23,361	7.5%	$29,170	8.3%
Total	$309,522	100%	$350,342	100%

Source: Regional Economic Information System, Bureau of Economic Analysis

Unemployment: Unemployment is a general indicator of an area's social and economic condition. While unemployment rates have been falling through the 1990s (see Table 3.37), Franklin County's unemployment rate has been higher than Maine's or the nation's as a whole. In 1990, the unemployment rate for Rangeley was 9.9%. This indicates that the area has experienced harder times than the rest of the state or country.

Table 3.37 Unemployment rates, Franklin County, Maine

Area	1991	1994
Franklin County	8.8%	7.9%
Maine	7.5%	7.4%
USA	5.5%	6.1%

na = not available
Source: U.S. Census Bureau

Table 3.38 lists 1997 and 1998 figures for the annual average resident work force and unemployment rate for the state, Franklin County, and the towns of Rangeley, Sandy River Plantation, Dallas Plantation, and Madrid. While the small work forces in Dallas, Madrid, and Sandy River Plantation generally result in better unemployment rates in the area, the Rangeley rate exceeds both the county and state averages.

Table 3.38 Area labor force and unemployment rates, 1997 and 1998

	Resident labor force		Unemployment rate	
Area	1997	1998	1997	1998
Dallas Plantation	103	98	1.0%	1.0%
Madrid	72	68	2.8%	1.5%
Rangeley	514	481	10.1%	8.3%
Sandy River Plant'n	40	39	0.0%	0.0%
Franklin County	14,960	14,290	8.0%	6.7%
Maine	658,700	651,000	5.4%	4.4%

Source: Maine Department of Labor

While unemployment rates remained steady in Sandy River Plantation, Dallas Plantation and Madrid throughout the year, the monthly Rangeley unemployment rates reflect the seasonal nature of the local business climate. Table 3.39 illustrates the extreme seasonal fluctuations in unemployment rate during the past two years, with the highest rates of unemployment generally occurring in April/May and November/December.

Table 3.39 Rangeley monthly unemployment rate, 1997 and 1998

Rangeley	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1997	5.5%	6.6%	8.5%	15.3%	17.8%	8.6%	7.1%	5.4%	7.2%	8.7%	14.5%	15.3%
1998	5.7%	8.3%	9.7%	18.8%	9.5%	5.1%	1.8%	3.4%	4.0%	6.8%	13.4%	13.3%

Source: Maine Department of Labor

Poverty: The poverty rate is another common gauge of the social and economic condition for an area. The estimated number of people living in poverty in Franklin County was 3,480 in 1989 and grew to 4,490 in 1993. These figures corresponded to percentages that were in line with the national rates but were noticeably higher than Maine's poverty rate (see Table 3.40). Since 1989, the percentage of people living in

poverty has increased. In 1989, Rangeley had approximately 14.9% of its population (158 persons) living below the poverty level.

Table 3.40 Estimated percentage of people living below the poverty level, Franklin County, Maine

Area	1989	1993
Rangeley	14.9%	na
Franklin County	12.5%	15.4%
Maine	10.8%	13.7%
USA	12.8%	15.1%

na = not available
Source: U.S. Census Bureau

Saddleback Ski Area in the Local Economy: Current employment figures for Saddleback Ski Area are not available. However, based on available information, Sno.engineering, Inc., has estimated that Saddleback Ski Area employs a total of five year-round employees and an additional 60 seasonal employees during the winter.

This information is consistent with an informal survey of mountain resorts in the United States conducted by Sno.engineering, Inc., which estimated that the ratio of total winter staffing to mountain capacity for large ski areas (with a "comfortable carrying capacity" of 6,000 or more visitors) is approximately one employee for every ten skiers. For smaller areas, Sno.engineering estimated that the ratio would decrease to approximately 0.5 to 0.7 employees for every ten skiers. Applying this ratio to Saddleback Ski Area (which has a "comfortable carrying capacity" of 1,300 visitors) yields an estimated winter staffing range of 65 to 91 employees.

According to Sno.engineering, a November 21, 1997 article in the Rangeley Highlander reported that annual payroll expenses at Saddleback Ski Area average approximately $300,000, out of an total annual operating budget in the neighborhood of $1 million. These figures are in line with industry averages for resort operations of this size, as indicated in the National Ski Area Association's 1997/98 Economic Analysis of United States ski areas.

As stated previously, Saddleback Ski Area draws approximately 30,000 to 35,000 skier visits annually. Table 3.41 applies the mid-point of this range to estimated per-skier spending figures derived from the National Ski Areas Association's 1996/97 Economic Analysis of US Ski Areas, and the Ski Maine Association's report *Economic Impact of the Ski Industry in Maine, 1996/97 Ski Season* (March, 1998, researched by Davidson-Peterson Associates), to estimate the ski area's contribution to the area's economy through skier spending.

Table 3.41 Estimated Saddleback Ski Area visitation and skier spending, 1996/97

Estimated skier visit total:	32,500	
Estimated spending:	Per Visit	96/97 Total
*Total at the ski area:**	$29.92	$972,400
tickets, lessons, rentals	$20.35	$661,232
food & beverage	$4.49	$145,860
lodging & other	$2.69	$87,516
retail ski shop	$2.39	$77,792
*Total outside the ski area:***	$46.49	$1,510,899
food & beverage***	$15.70	$510,315
lodging***	$16.18	$525,759
shopping	$4.42	$143,650
ground transportation	$3.87	$125,775
liquor	$2.37	$77,025
entertainment	$1.76	$57,200
tolls	$0.77	$25,025
admission fees	$0.71	$23,075
sweepstakes	$0.08	$2,600
sightseeing	$0.01	$325
other	$0.62	$20,150
Combined Totals:	$76.41	$2,483,299

* Estimated from NSAA EAUSSA 1996/97, Northeast by size, adjusted 10% for size, distributed by % per department
** From Ski Maine Economic Impact report of 1996/97 ski season, March 1998, average skier spending statewide
*** Represents Ski Maine figure, minus ski area portion of food & beverage and lodging spending

As Table 3.41 illustrates, Saddleback Ski Area currently generates approximately $2.5 million annually in estimated direct skier spending, with more than $1.5 million of that total being spent outside of the ski area itself. Combining the sales of food and beverages, lodging, retail ski shop, shopping, transportation, liquor, entertainment, and "other" expenses yields a total of taxable consumer retail sales to Saddleback Ski Area skiers of $1.77 million.

Although 1997 taxable consumer retail sales information for Franklin County is not available, the $1.77 million figure mentioned above represents 3.25 percent of the Rangeley area economic summary district (which includes Dallas Plantation, Madrid, Rangeley, Sandy River Plantation, Adamstown, Carrabasset Valley, Coburn Gore, Coplin Plantation, Eustis, Freeman Township, Kingfield, Lincoln Plantation, Magalloway Plantation, Rangeley Plantation, and Salem Township) total of $54.56 million (1997

Retail Sales Annual Report, Maine Business Online, based on data prepared by the Maine State Planning Office).

Table 3.42 lists the towns and unorganized townships of Franklin County in which Saddleback Ski Area and its affiliated companies pay property taxes. Included in the table are the 1998 tax rates, Saddleback Ski Area (and affiliated companies) tax payments, and the percentage of each town's total tax billings represented by Saddleback Ski Area's payment. Madrid assesses taxes on 90 percent of the total valuation; the other three towns assess at 100 percent of valuation.

Table 3.42 1998 Property tax information

Town	1998 Rate per 1,000	Saddleback Taxes	% of Town Total Taxes
Redington Township	$8.02	$646	5.5%
Madrid	$16.30	$642	0.4%
Dallas Plantation	$8.36	$6,294	1.8%
Sandy River Plant'n	$6.65	$21,953	11.2%
Total		$29,535	4.1%

Sources: ME Dept. of Revenue Services; Madrid, Dallas Plantation, and Sandy River Plantation town offices

As Table 3.42 indicates, Saddleback Ski Area paid $29,535 in local property taxes for 1998. This number could change slightly in the near future, as Madrid is considering becoming an unorganized township, which would then be taxed the same rate as Redington Township.

Planning Environment

The study area is located in western Maine, in the unorganized townships of Dallas Plantation, Sandy River Plantation, and Redington Township, and the organized township of Madrid. Dallas Plantation, Sandy River Plantation, and Redington Township are regulated by the Maine Land Use Regulation Commission. Madrid is currently incorporated and has its own zoning regulations, though it may disincorporate in the near future. Rangeley, an organized town and the largest community in the region, is located in Sandy River Plantation.

Appalachian Trail Protection: The National Trails System Act of 1968, as amended, made preservation of the Appalachian Trail a matter of Federal law. The legislated purpose for establishing the Trail as a national scenic trail was "to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass." A detailed discussion of the legislative authority is provided in Chapter 1, under the discussion of "Purpose and Need."

In 1981, the National Park Service published the *Comprehensive Plan for the Protection, Management, Development and Use of the Appalachian National Scenic Trail.* This

document, which was updated in 1987, is primarily focused on management and planning issues along the Trail. The *Comprehensive Plan* outlines the general process for protecting the Appalachian Trail in Chapter V, "Protection of the Trailway."

The *Appalachian Trail Land Acquisition Plan* (updated in 1993) identifies the following planning objectives and protection goals for remote resources along the Appalachian Trail, such as ridgelines or other isolated areas with difficult access:

> Planning Objective: To preserve remote character; to protect native vegetation, wildlife, and water sources; to limit vehicle access; to allow only compatible resource utilization; to include sufficient access for a well-designed trail.
>
> Protection Goals: To acquire sufficient interest to meet objectives, usually a variable corridor designed to reflect topography and vegetation characteristics seeking enough protection for the footpath to avoid intrusions on the Trail experience from incompatible development.

The *Land Acquisition Plan* also identifies the following planning and protection goals for significant natural area resources along the Appalachian Trail, such as highlands, lakes, and roadless areas with unusual natural or scenic values:

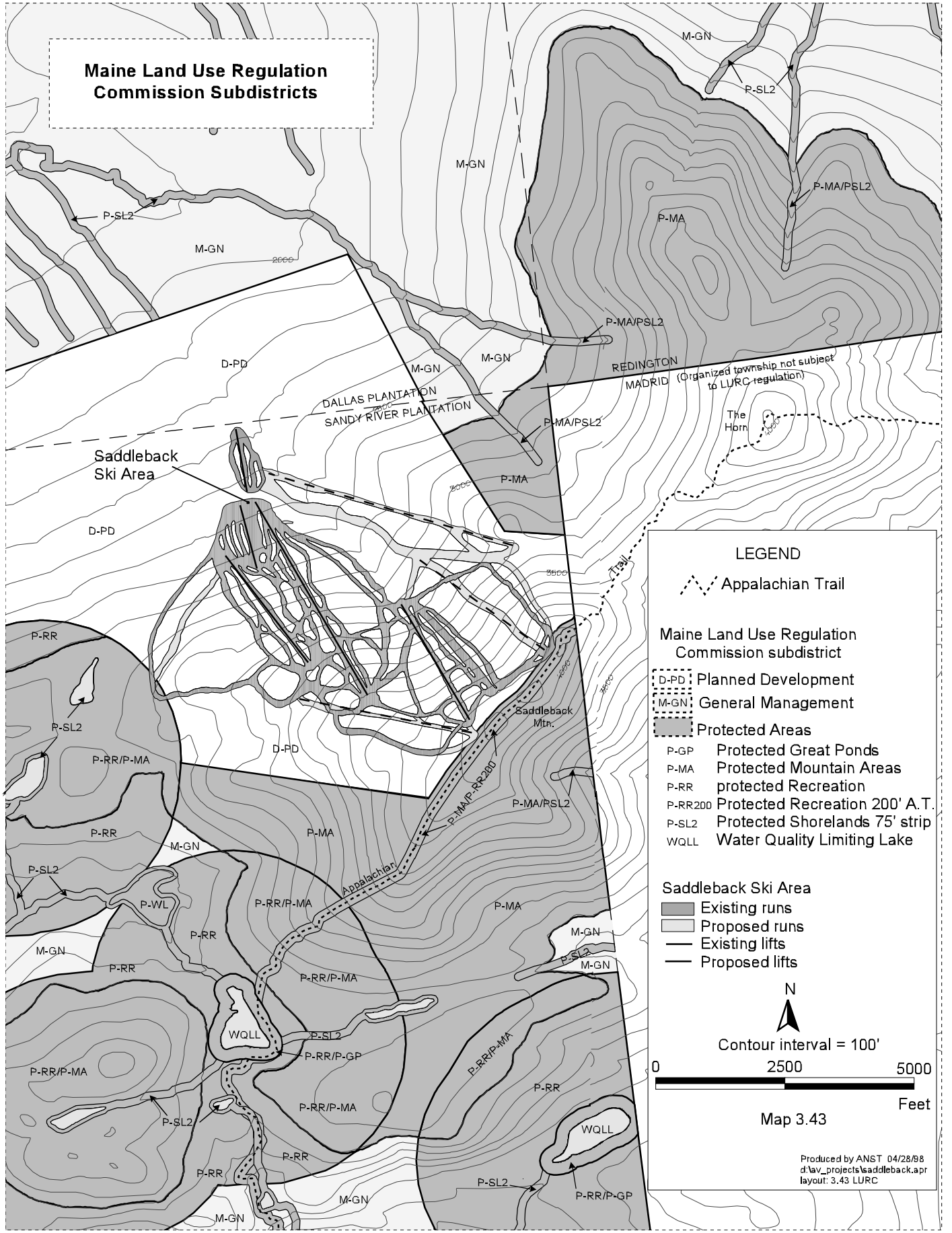
> Planning Objective: To preserve natural and geologic features, vistas, vegetation, wildlife, and water quality; to avoid vehicle access; to avoid uses inconsistent with natural values; to preserve the outdoor recreational potential of the area.
>
> Protection Goals: To acquire permanent interests in enough land to preserve the character of the area, using natural boundaries to the extent possible.

The *Land Acquisition Plan* further states that "(I)f the land in question is remote from road access or has unusual importance for its natural, cultural or scenic qualities that cannot be protected by other means, the National Park Service will seek to acquire most if not all of the real property interest."

Maine Land Use Regulation Commission: The Maine Land Use Regulation Commission (LURC) is responsible for promulgating and enforcing regulations that govern land use in Maine's unorganized townships.

The majority of the study area is located within LURC's Mountain Area Protection Subdistrict (P-MA), with lower elevations in the General Management Subdistrict (M-GN) and Recreation Protection Subdistrict (P-RR). (See Map 3.43.)

Eddy Pond is identified as a "Water Quality Limiting Lake" (WQLL), with a one-half-mile Recreation Protection Subdistrict (P-RR) buffer surrounding it.


Maine Land Use Regulation Commission Subdistricts
M-GN
P-SL2
P-MA/PSL2
P-MA
D-PD
REDINGTON
MADRID (Organized township not subject to LURC regulation)
DALLAS PLANTATION
SANDY RIVER PLANTATION
The Horn
Saddleback Ski Area
Saddleback Mtn.
Appalachian Trail
P-RR
P-RR/P-MA
P-WL
WQLL
P-RR/P-GP
P-MA/P-RR200
LEGEND
Appalachian Trail
Maine Land Use Regulation Commission subdistrict
D-PD Planned Development
M-GN General Management
Protected Areas
P-GP Protected Great Ponds
P-MA Protected Mountain Areas
P-RR protected Recreation
P-RR200 Protected Recreation 200' A.T.
P-SL2 Protected Shorelands 75' strip
WQLL Water Quality Limiting Lake
Saddleback Ski Area
Existing runs
Proposed runs
Existing lifts
Proposed lifts
N
Contour interval = 100'
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Feet
Map 3.43
Produced by ANST 04/28/98
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layout: 3.43 LURC

LURC Protection Subdistricts are "areas where development would jeopardize significant natural, recreational and historic resources, including, but not limited to, flood plains, precipitous slopes, wildlife habitat, and other areas critical to the ecology of the region or the state."

The one-half mile wide Recreation Protection Subdistrict (P-RR) buffer surrounding Eddy Pond is intended to provide protection of this Management Class 6 Lake from development and intensive recreational uses and conserve the natural environment surrounding the lake that is essential for primitive recreational experiences. (See Map 3.43) Certain low-intensity uses may be permitted by special exception within this subdistrict. All uses not expressly allowed, with or without a permit or by special exception, are prohibited.

In 1975, the Maine Land Use Regulation Commission identified a 200-foot wide Recreation Protection Subdistrict (P-RR) centered on the footpath of the Appalachian Trail. This designation was intended to initially protect the Trail from development and intensive recreational uses and conserve the natural environment of the Trail essential for primitive recreational experiences. All uses not expressly allowed, with or without a permit or by special exception, are prohibited within this subdistrict. Intensive recreational development**,** such as alpine ski lifts and trails**,** would be considered a prohibited use within this subdistrict.

The purpose of LURC's Mountain Areas Protection Subdistrict (P-MA) designation, which encompasses areas above 2,700 feet in elevation, is "to regulate certain land use activities in mountain areas in order to preserve the natural equilibrium of vegetation, geology, slope, soil, and climate in order to reduce danger to public health and safety posed by unstable mountain areas, to protect water quality, and to preserve mountain areas for the scenic values and recreational opportunities." Areas above 2,700 feet comprise approximately 2.0% of LURC's jurisdiction and slightly more than 1.0% of the state's land base, and are considered fragile environments because of higher wind velocities, humidity, and precipitation; fragile, shallow, and acidic soils; steep slopes with high erosion hazards; short growing seasons; and low-diversity vegetative communities under significant environmental stress. Dispersed recreational uses, including hiking and cross-country skiing, are considered compatible with the character of mountain areas and with their use for scenic, wilderness, wildlife, and water resource values. According to LURC, developed recreation areas, such as ski areas, require regulation to ensure that the public interest is served and are allowed by special exception upon issuance of a permit from LURC.

The 1997 LURC Comprehensive Land Use Plan states:

> "Alpine ski areas are the jurisdiction's most intensive recreational facilities, and most of the issues relating to them involve their potential impacts on natural resources and adjacent land uses and activities. The most likely future trend is continued expansion of Sugarloaf, Saddleback, and Sunday River ski areas, with a considerable amount of "spill-over" development – seasonal homes, lodging

accommodations, restaurants, and sports outfitters – in adjacent areas. These areas are all located on the edge or just outside the jurisdiction and are near major highway corridors; from an overall planning perspective, expansion of existing areas is preferable to the development of a new mountain, especially one located in a more remote area. However, expansion of existing areas must be accomplished with extreme care to address the environmental constraints of mountainside development and to preserve the natural and recreational values of these areas."

"For any future ski area expansion, the Commission will pay particular attention to:

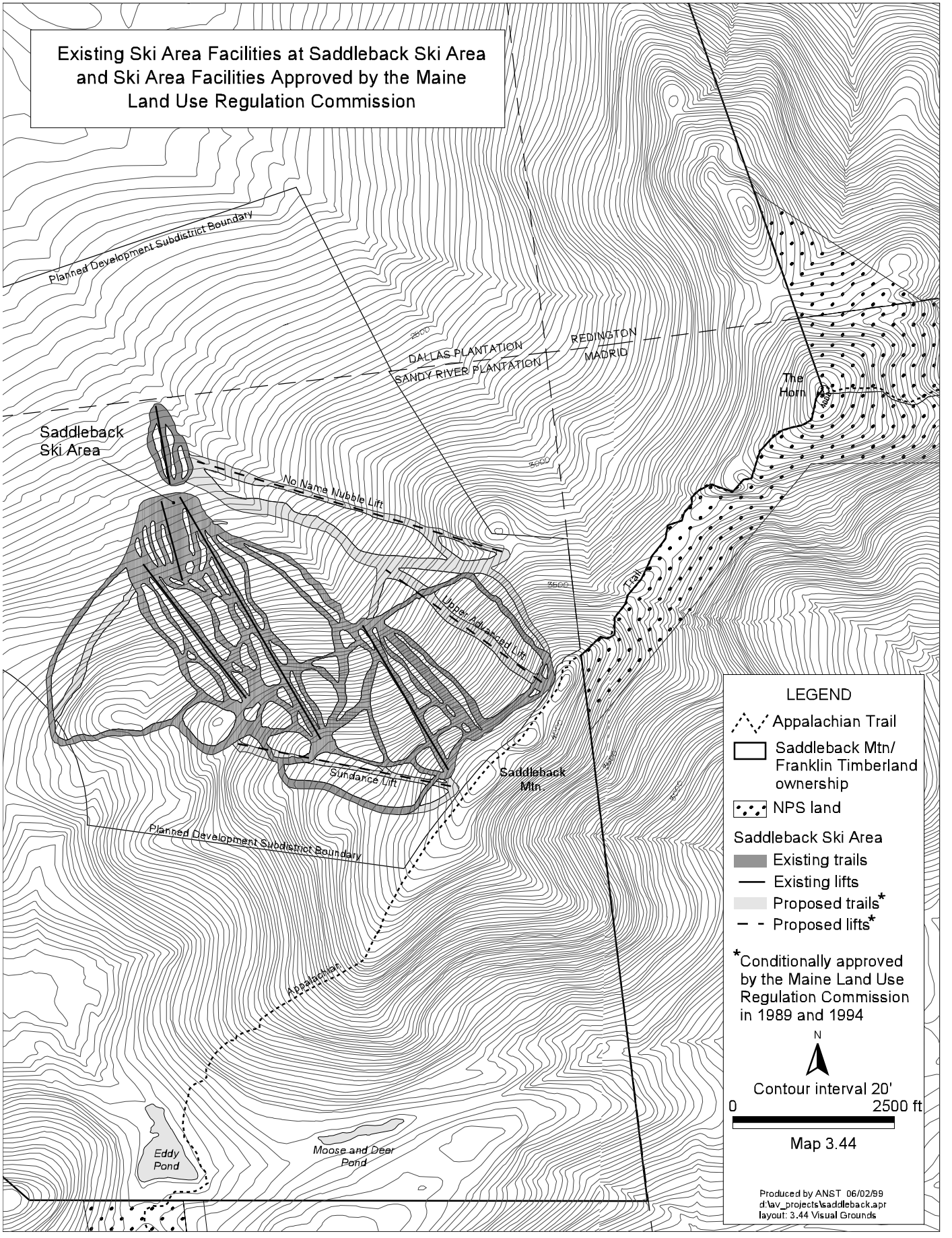
- The visual impact of ski area and related development on scenic values in the vicinity, especially from the Appalachian Trail and other significant trails and view points. The proximity of both Saddleback and Sugarloaf to sections of the Appalachian Trail make this a particular concern, although sensitive layout and buffering can help minimize impacts. In approving Saddleback's (1994) expansion proposal, the Commission determined that there would be no undue adverse impacts on the A.T."

-- pages 73-74, LURC Comprehensive Land Use Plan

LURC's regulations also provide for development. Saddleback Ski Area's existing ski area and conditionally approved development is contained within a Planned Development Subdistrict (D-PD). (See Map 3.44.) The purpose of the Planned Development Subdistrict is to allow for large scale, well-planned developments. Permits are granted by LURC when it is persuaded by a preponderance of all evidence that the location of the site is the best reasonably available for the proposed use and that the goals and policies of the Comprehensive Land Use Plan are served.

A Planned Development Subdistrict proposed for predominantly recreational land uses must contain a minimum of 150 contiguous acres. No development other than access roads or utility lines is permitted less than 400 feet from any property line unless good cause is shown. A detailed preliminary and final application planning process is required.

LURC Actions with Regard to Saddleback Mountain: LURC issued a preliminary approval of Saddleback Ski Area's proposed expansion of the existing ski area (Preliminary Development Plan and Zoning Petition ZP 372) in February 1989. LURC issued an amendment in October 1994 to permit Saddleback Ski Area to submit applications for Final Development Plan approval for each phase of development prior to construction or expansion, subject to the same conditions contained in the preliminary approval. Saddleback Ski Area as yet has not submitted an application to LURC for final development approval for the ski area facilities.


Existing Ski Area Facilities at Saddleback Ski Area and Ski Area Facilities Approved by the Maine Land Use Regulation Commission
Planned Development Subdistrict Boundary
DALLAS PLANTATION
SANDY RIVER PLANTATION
REDINGTON
MADRID
The Horn
Saddleback Ski Area
No Name Nubble Lift
Upper Advanced Lift
Sundance Lift
Saddleback Mtn.
Trail
Planned Development Subdistrict Boundary
Appalachian
Eddy Pond
Moose and Deer Pond
LEGEND
Appalachian Trail
Saddleback Mtn/ Franklin Timberland ownership
NPS land
Saddleback Ski Area
Existing trails
Existing lifts
Proposed trails*
Proposed lifts*
*Conditionally approved by the Maine Land Use Regulation Commission in 1989 and 1994
N
Contour interval 20'
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Map 3.44
Produced by ANST 06/02/99
d:\av_projects\saddleback.apr
layout: 3.44 Visual Grounds

Saddleback's Ski Area's conditionally approved permit provides for construction of the Sundance, Upper Advanced, No Name Nubble, and El Hombre ski lifts and ski trails. The general locations of these facilities are shown on Map 3.44. The exact location of the Sundance and Upper Advanced ski lifts will be established as part of LURC's Final Development Plan approval process, once Saddleback Ski Area has met the conditions contained in the Preliminary Development Plan approved by LURC. LURC's approval of the Preliminary Development Plan contains numerous requirements relating to protection of the Appalachian Trail and alpine and protected subalpine vegetation on Saddleback Mountain, including the following restrictions on construction and operation of the Upper Advanced and Sundance ski lifts and ski trails:

- Saddleback Ski Area must submit an alternative location analysis which fully examines a wide range of alternative locations for each ski trail and ski lift, and, to the Commission's satisfaction, determines suitable locations that would, while serving skier needs, reduce the visual intrusion of the proposed developments on the Appalachian Trail and reduce the adverse impacts on alpine and protected subalpine vegetation. Such an alternative location study should include, but not be limited to, a detailed description of the facts used in determining suitability of sites, weighing of these factors, and a detailed assessment of all locations of alternative sites considered.

- Saddleback Ski Area must submit a visual impact analysis which, to the Commission's satisfaction, comprehensively addresses the impact on the Appalachian Trail viewshed of the various alternatives considered above. This visual impact analysis shall be prepared using state of the art technologies for visual simulations such as computer modeling and photomontage techniques.

- New ski lifts, ski trails, cleared areas around lift terminals, and other associated development activities may not be approved within areas exhibiting either alpine or protected subalpine species.

- The operation for the general public use of proposed ski lift facilities is permitted only during periods of snow cover on trails, and only for ski related purposes.

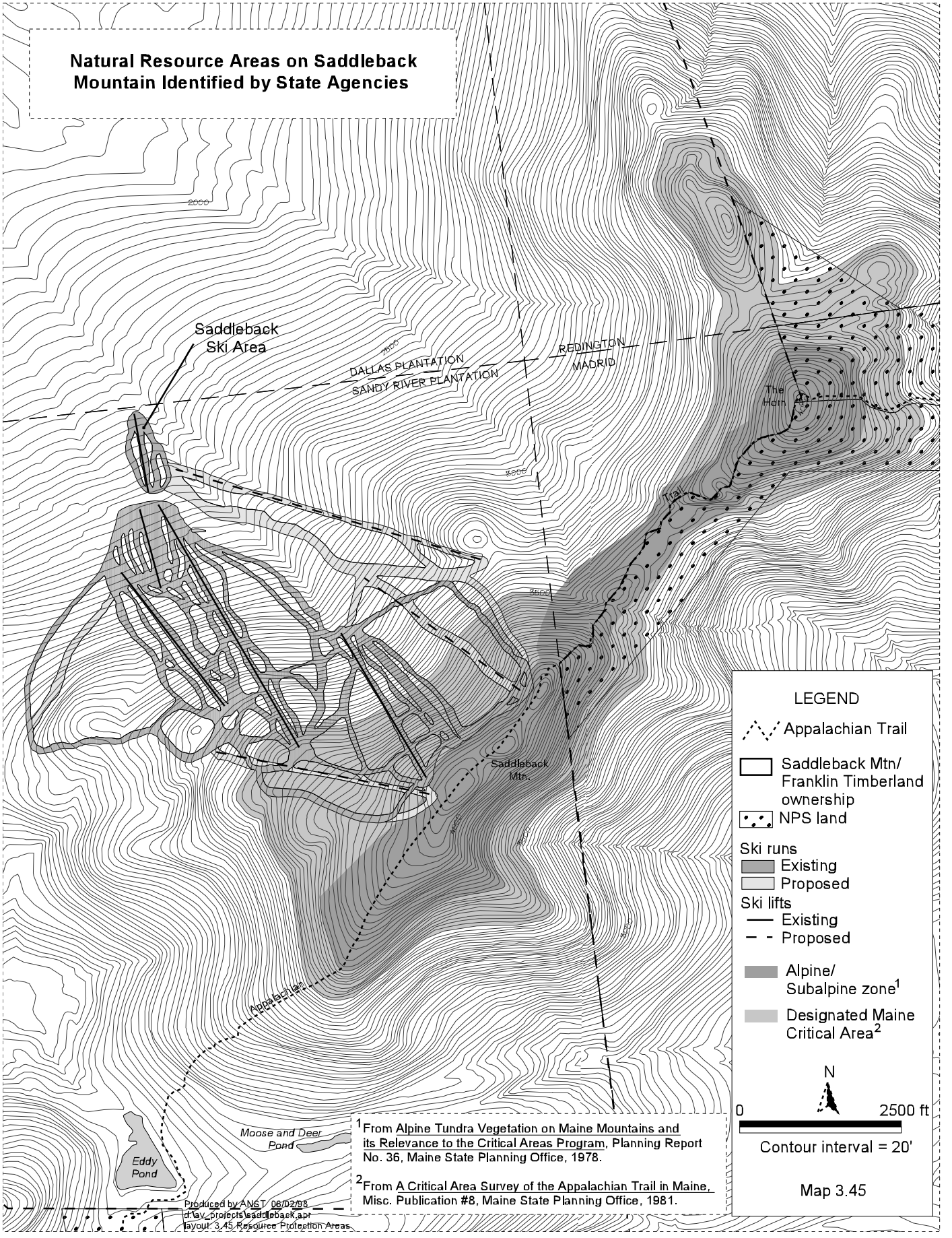
- Suitable locations are found for the upper lift terminals.

Maine Department of Environmental Protection: In the organized townships of Maine (such as the Town of Madrid), the Maine Department of Environmental Protection (DEP) is responsible for issuing Site Location of Development Law Permits for developments that may have a substantial effect upon the environment. According to DEP, a "Site Law Permit" would be required for any large-scale development such as ski area expansion. Typically, Maine DEP evaluates proposals based on their effects on groundwater and surface water quality, visual and aesthetic resources, stormwater run-off, archaeological and historical resources, wetlands, erosion and sedimentation, wildlife, and threatened and endangered species.

Madrid: A small, inaccessible section between the summit of Saddleback Mountain and The Horn is located in the Town of Madrid. Madrid's current zoning for this area is Woodland/Recreational District. In this district, non-intensive recreational uses, wildlife management practices, agriculture, and timber harvesting are permitted. Development requires the approval of the town board.

Maine State Planning Office: The Maine State Planning Office has identified key natural resource areas on Saddleback Mountain in several planning studies (see Map 3.45). *Alpine Tundra Vegetation on Maine Mountains and its Relevance to the Critical Areas Program (Planning Report No. 36),* published in 1978 by the Maine State Planning Office, identified areas of alpine and subalpine vegetation on Saddleback Mountain. In 1981, the Maine State Planning Office published *A Critical Area Survey of the Appalachian Trail in Maine (Publication No. 8),* which identified a Designated Maine Critical Area at Saddleback Mountain consisting of all lands above 3,500 feet in elevation. These studies and the subsequent designation are informational, not regulatory.

Natural Resource Areas on Saddleback Mountain Identified by State Agencies



[1] From Alpine Tundra Vegetation on Maine Mountains and its Relevance to the Critical Areas Program, Planning Report No. 36, Maine State Planning Office, 1978.

[2] From A Critical Area Survey of the Appalachian Trail in Maine, Misc. Publication #8, Maine State Planning Office, 1981.

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d:\av_projects\saddleback.apr
layout: 3.45 Resource Protection Areas